88:21435
Comparison between homogeneous catalysts and their heterogenized counterparts.
Strohmeier, Walter; Hitzel, Erich; Kraft, Barbara (Inst. Phys. Chem., Univ. Wuerzburg, Wuerzburg, Ger.). J. Mol. Catal., 3(1-3), 61-9 (English) 1977. CODEN: JMCADS. DOCUMENT TYPE: Journal CA Section: 21 (General Organic Chemistry)

The activities of homogeneous hydrogenation and dehydrogenation catalysts were examd. Then the homogeneous catalysts were heterogenized and the activities of the heterogeneous counterparts compared with the precursors. Heterogenization of RhCl3 by removal of the SnCl2 stabilizer destroyed its activity as a dehydrogenation catalyst; heterogenization of Ir catalysts did not destroy their activity.

Keywords

hydrogenation catalyst homogeneous heterogeneous
dehydrogenation catalyst homogeneous heterogeneous
catalyst hydrogenation dehydrogenation homogeneous heterogeneous
rhodium hydrogenation dehydrogenation homogeneous heterogeneous
iridium hydrogenation dehydrogenation homogeneous heterogeneous
platinum hydrogenation dehydrogenation homogeneous heterogeneous
cobalt hydrogenation dehydrogenation homogeneous heterogeneous

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16941-92-7
57876-30-9
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14871-41-1
16941-12-1
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110-83-8, reactions
140-88-5
141-79-7
536-74-3
592-41-6, reactions
624-48-6
624-49-7
645-62-5
693-02-7
931-88-4
1700-10-3
4050-45-7
7688-21-3
hydrogenation of, with homogeneous and heterogeneous

catalysts

95:149560
Hydrogenation activity of homogeneous and heterogenized rhodium(I) complexes containing [w-(triethoxysilyl)alkyl]diphenylphosphines.
Czakova, Marie; Capka, Martin (Inst. Chem. Process Fundam., Czech. Acad. Sci., Prague 165 02/6, Czech.). J. Mol. Catal., 11(2-3), 313-22 (English) 1981. CODEN: JMCADS. ISSN: 0304-5102. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry)
Kinetics of liq. phase by hydrogenation of alkenes catalyzed by homogeneous Rh(I) complexes prepd. in situ from m,m'-dichlorobis[di(alkene)rhodium] and phosphines of the type RPPh2 [R = (CH2)n(OEt)3, n = 1-6, R = CH2SiMe3 -m(OEt)m; m = 1-3] and by their heterogenized analogs anchored to silica have been studied at 1.1 atm H pressure and 37-67°. The hydrogenations catalyzed by catalysts of both types were 1st order in the alkenes. The reaction rates are discussed in relation to the deactivation of the rhodium catalysts due to the dimerization of catalytically active species. The dimerization takes place also on the surface of the support and depends on the length of the spacer group sepg. the diphenylphosphino group from the surface.

Keywords

hydrogenation rhodium phosphine alkene
silica rhodium hydrogenation catalyst

Index Entries

Hydrogenation catalysts
homogeneous and heterogenized rhodium complexes contg. (triethoxysilyl)alkylphenylphosphines, for alkenes
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of alkenes over homogeneous and heterogenized rhodium complexes contg. (triethoxysilyl)alkyldiphenylphosphines
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18673-56-8
52090-23-0
76563-71-8
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78928-79-7
78928-80-0
78928-81-1
78928-82-2
78929-00-7
78929-01-8
78929-02-9
78929-03-0
78929-04-1
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4541-02-0
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2212-10-4
13508-53-7
15267-95-5
65973-67-3
78887-77-1
78887-82-8
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52090-20-7
78887-78-2
78887-79-3
78887-80-6
78887-81-7
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12081-16-2
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87:133268
Heterogenized homogeneous catalysts. Rhodium catalysts for methanol carbonylation.
Scurrell, Michael S. (Inst. Kemiind., Tech. Univ. Denmark, Lyngby, Den.). Platinum Met. Rev., 21(3), 92-6 (English) 1977. CODEN: PTMRA3. DOCUMENT TYPE: Journal; General Review CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
A review with 19 refs.

Keywords

review heterogenized homogeneous catalyst
methanol carbonylation rhodium review

Index Entries

Carbonylation catalysts
heterogenized homogeneous rhodium, for methanol
Carbonylation
of methanol, mechanism of heterogenized homogeneous rhodium catalyzed
67-56-1, reactions
carbonylation of, mechanism of heterogenized homogeneous rhodium catalyzed
7440-16-6, uses and miscellaneous
heterogenized homogeneous carbonylation catalyst, for methanol, mechanism with

95:221066
Comparative study of homogeneous and heterogenized cobalt systems by macromolecular supports in diene monomer polymerization.
Golubeva, N. D.; Pomogailo, A. D.; Kuzaev, A. I.; Ponomarev, A. N.; Dyachkovskii, F. S. (Inst. Chem. Phys., Chernogolovka 142432, USSR). J. Polym. Sci., Polym. Symp., 68, 33-42 (English) 1981. CODEN: JPYCAQ. ISSN: 0360-8905. DOCUMENT TYPE: Journal

CA Section: 38 (Elastomers, Including Natural Rubber) Section
cross-reference(s): 67
In the polymn. of butadiene [106-99-0] or isoprene [78-79-5], the use of heterogeneous donor-acceptor or covalent Co(II) compd. catalysts supported on polymers (e.g. polyethylene grafted with 4-vinylpyridine, vinylimidazole, acrylic acid) retarded initiation and deactivation mechanisms, in comparison with homogeneous catalysts, giving higher mol. wts. and yields. Propagation consts. and polymer structures indicated that the active sites were the same in both catalysts. The formation and deactivation of the active sites can be controlled by immobilization of the Co(II) compds.

Keywords

catalyst polymn diene heterogeneity
butadiene polymn catalyst heterogeneous
isoprene polymn catalyst heterogeneous
cobalt catalyst polymn diene
vinylpyridine polymer catalyst polymn
vinylimidazole polymer catalyst polymn
ethylene copolymer catalyst polymn
acrylic copolymer catalyst polymn

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37095-13-9
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14024-48-7, complexes with polymers
catalysts, for polymn. of dienes, heterogeneity effect on activity of
9010-77-9, complexes with cobaltous salts
26355-13-5, complexes with cobaltous salts
80057-17-6, complexes with cobaltous salts
graft, catalysts, for polymn. of dienes, heterogeneity effect on
activity of
78-79-5, reactions
106-99-0, reactions
polymn. of, catalysts for, heterogeneity effect on activity of

92:57664
Heterogenized homogeneous catalysts. Rhodium catalysts for methanol carbonylation.
Scurrell, Michael S. (Inst. Kemiind., Tech. Univ. Denmark, Lyngby, Den.). Chim. Ind. (Milan), 61(9), 652-5 (English) 1979. CODEN: CINMAB. ISSN: 0009-4315. DOCUMENT TYPE: Journal; General Review CA Section: 22 (Physical Organic Chemistry)
A review with 20 refs.

Keywords

review rhodium catalyst methanol carbonylation
heterogenized homogeneous carbonylation catalyst review

Index Entries

Carbonylation catalysts
heterogenized homogeneous rhodium, for methanol

67-56-1, reactions
carbonylation of, heterogenized homogeneous rhodium
catalysts for
7440-16-6, complexes
catalyst, for methanol carbonylation

86:4906
Catalytic activity of homogeneous and heterogenized (RhCl(PPh3)3) for hydrogenation of substrates without solvents.
Strohmeier, Walter; Hitzel, Erich (Inst. Phys. Chem., Univ. Wuerzburg, Wuerzburg, Ger.). Z. Naturforsch., B: Anorg. Chem., Org. Chem., 31B(7), 945-7 (German) 1976. CODEN: ZNBAD2. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds) Section cross-reference(s): 24, 67
Heterogenized RhCl(PPh3)3 fixed on the glass wall of the reaction vessel hydrogenated mesity oxide, Et acrylate, or cyclohexene in the absence of a solvent at 50.degree. with high reaction rates and turnover nos. The catalyst was also used in the oxidn. of cyclohexene. The heterogenized catalyst was prepd. (and reactivated) by treatment with H2O2.

Keywords

catalyst heterogeneous rhodium
hydrogenation catalyst rhodium phosphine
oxidn catalyst rhodium phosphine
mesityl oxide hydrogenation
acrylate hydrogenation
cyclohexene hydrogenation oxidn

Index Entries

Oxidation catalysts
rhodium phosphine, heterogenized, for cyclohexene
Hydrogenation catalysts
rhodium phosphine, heterogenized, for cyclohexene, ethyl acrylate, or mesityl oxide
14694-95-2
catalysts, heterogenized, for hydrogenation or oxidn.
110-83-8, reactions
hydrogenation and oxidn. of, catalysts for
140-88-5
141-79-7
hydrogenation of, catalysts for

92:65282
Catalysis by metal complexes. LVIII. Asymmetric distribution of a metal in a "heterogenized homogeneous" catalyst.
Rericha, Roman; Vitek, Antonin; Kolihova, Dana; Sychra, Vaclav; Sir, Zdenek; Hetflejs, Jiri (Inst. Chem. Process Fundam., Czech. Acad. Sci., Prague 165 02, Czech.). Collect. Czech. Chem. Commun., 44(11), 3183-93 (English) 1979. CODEN: CCCCAK. ISSN: 0366-547X. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis and Reaction Kinetics) Section cross-reference(s): 79
Beads of a styrene-divinylbenzene copolymer modified by dimethylaminomethyl groups were used as a support for H2PtCl, (having Pt:Pd ratio 104) in the form of its trialkylammonium salt (about 12 wt. % of Pt). A distribution of the metal in individual beads was estd. by analyzing traces of Pd in 107 single beads by flameless at. absorption spectrometry. The distribution curve is asym. and fits a 3-parameter log-normal curve (Johnson SL family of empirical

distributions). The correlation coeff. between the wt. of one bead and its abs. content of Pd is rather low, 0.56, so it is obvious that any biased sampling of such catalyst may cause misleading results both in the elemental anal. and in catalytic data, esp. in expts. carried out on a millimole scale. A working procedure for an unbiased sampling of bead catalyst is proposed.

Keywords

platinum anion exchanger catalyst distribution
distribution platinum catalyst support
palladium analysis platinum distribution detn

Index Entries

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catalysts, distribution of platinum active metal in beads of
Catalysts and Catalysis
heterogenized homogeneous, wide distribution of active metal in
7440-06-4, uses and miscellaneous
catalysts, variety of distribution of bead-supported
7440-05-3, uses and miscellaneous
platinum distribution detn. by anal. of impurity of, in bead-supported catalysts

90:120501
Heterogenized homogeneous catalysts.
Scurrell, M. S. (Tech. Univ. Denmark, Lyngby, Den.). Catalysis (London), 2, 215-42 (English) 1978. CODEN: CATADK. DOCUMENT TYPE: Journal; General Review CA Section: 22 (Physical Organic Chemistry)
A review with 117 refs.

Keywords

review heterogenized homogeneous catalyst

Index Entries

Catalysts and Catalysis
homogeneous, heterogenized

94:155824
Comparison of catalytic properties of homogeneous Group VIII metals and those heterogenized on support surfaces with alizarin.
Bulatov, A. V.; Klyuev, M. V.; Khidekel, M. L. (USSR). Katalizatory, Soderzh. Nanesen. Kompleksy. Materialy Simpoz., Tashkent, 1980, Novosibirsk, (Ch 2), 14-17 From: Ref. Zh., Khim. 1980, Abstr. No. 24B1293(Russian) 1980. DOCUMENT TYPE: Journal CA Section: 21 (General Organic Chemistry) Section cross-reference(s): 40, 67
Title only translated.

Keywords

alizarin metal hydrogenation catalyst
palladium alizarin hydrogenation catalyst
platinum alizarin hydrogenation catalyst
amination catalyst metal alizarin

Index Entries

Hydrogenation catalysts
metal alizarin complexes, for hexene and nitrobenzene
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Amination catalysts
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130-22-3
7440-05-3, complexes with alizarin
7440-06-4, complexes with alizarin
catalysts, for hydrogenation and amination
98-95-3, reactions
592-41-6, reactions
hydrogenation of, with metal alizarin complexes

90:122135
Comparative analysis of homogeneous and heterogenized cobalt systems in the polymerization of diene monomers.
Golubeva, N. D.; Pomogailo, A. D.; Kuzaev, A. I.; Ponomarev, A. N.; D'yachkovskii, F. S. (Inst. Khim. Fiz., Chernogolovka, USSR). Dokl. Akad. Nauk SSSR, 244(1), 89-93 [Chem.] (Russian) 1979. CODEN: DANKAS. ISSN: 0002-3264. DOCUMENT TYPE: Journal CA
Section: 35 (Synthetic High Polymers)
The polymn. of isoprene (I) [78-79-5] or butadiene [106-99-0] in the presence of CoCl2.(Py)2-Et2AlCl or heterogeneically on polymeric supports, i.e., immobilized CoCl2-Et2AlCl, takes place on similar reactive sites, but the immobilization of the catalyst facilitates control over the formation and deactivation of reactive sites. The polymn. rate const. and activation energy of polymn. of I are higher in the presence of the homogeneous system than in the presence of the heterogeneous one. Catalyst deactivation is inhibited in the heterogeneous system, leading to increased yield of polybutadiene (II) [9003-17-2]. Also, the mol. wt. of II prepd. on the immobilized system is considerably higher than in the presence of the homogeneous one. The heterogeneous system increases the fraction of cis-1,4 units in both II and polyisoprene [9003-31-0] by 2-11%, even though the microstructure of the polymers is almost identical.

Keywords

isoprene polymn kinetics cobalt catalyst
butadiene polymn kinetics cobalt catalyst
polymeric support diene polymn
polybutadiene stereoregularity cobalt catalyst
polyisoprene stereoregularity cobalt catalysts
ethylaluminum chloride cobalt catalysts
ethylaluminum chloride catalysts diene polymn

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26355-13-5, cobalt complexes
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graft, catalysts, for polymn. of diene monomers

78-79-5, reactions
106-99-0, reactions
polymn. of, catalyst effect on kinetics of
9003-17-2
9003-31-0
stereoregularity of, cobalt system catalysts effect on

86:107101
Heterogenization of homogeneous and pseudohomogeneous catalytic systems of olefin polymerization through macromolecular carriers.
Pomogailo, A. D.; Kritskaya, D. A.; Lisitskaya, A. P.; Ponomarev, A. N. (Otd. Inst. Khim. Fiz., Chernogolovka, USSR). Dokl. Akad. Nauk SSSR, 232(2), 391-4 [Phys. Chem.] (Russian) 1977. CODEN: DANKAS. DOCUMENT TYPE: Journal CA Section: 35 (Synthetic High Polymers)
Supports for the title catalyst systems were described consisting of the polymer backbone grafted with monomers contg. functional groups capable of forming bonds with the catalyst. The use of this support was illustrated by kinetics of polymn. of ethylene [74-85-1] in the presence of catalysts (C5H5)2TiCl2 [1271-19-8], VO(OEt)3 [1686-22-2], Ti(OBu)4 [5593-70-4], TiCl4, and VCl4 on polyethylene or polypropylene grafted with allyl alc., allylamine, diallyamine, acrylic acid, vinyl acetate, etc. Et2AlCl [96-10-6] was used as a cocatalyst. Higher stability and activity of the investigated heterogeneous catalyst, as compared to that of the homogeneous and pseudohomogeneous ones, were ascribed to an increased no. of active centers and to retardation of the activating process.

Keywords

heterogenization polymn catalyst
support polym catalyst
polyethylene graft copolymer
polypropylene graft copolymer
ethylene polymn heterogeneous catalyst
kinetics ethylene polymn

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7550-45-0, uses and miscellaneous
7632-51-1
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96-10-6, uses and miscellaneous
catalysts, contg. titanium and vanadium compds., polymer supports for heterogenization of
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62197-35-7

graft, heterogenization of polymn. catalysts on
74-85-1, reactions
polymn. of, on heterogenized catalysts, kinetics of

88:36947
The molybdenum(V) complexes as the homogeneous and heterogenized catalysts in epoxidation reactions of olefins with the organic hydroperoxides.
Sobczak, J.; Ziolkowski, J. J. (Inst. Chem., Univ. Wroclaw, Wroclaw, Pol.). J. Mol. Catal., 3(1-3), 165-72 (English) 1977. CODEN: JMCADS. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry)
The catalytic properties of Mo(V) complexes with ligands such as ethylene glycol, lactic acid and amygdalic acid in homogeneous systems, as well as the properties of the heterogenized catalysts obtained in the ionic exchange reaction of the complex Na2[Mo2O4(OX)2(H2O)2]×3H2O with Castel A-500p, Dowex 1X8, and Wofatit AD-41 anionites, are examd. The catalysts are active in epoxidn. reactions of olefins with org. hydroperoxides.

Keywords

epoxidn catalyst cyclohexene molybdenum

Index Entries

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7439-98-7, complexes with lactic acid
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50-21-5, reactions
90-64-2
107-21-1, reactions
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27845-91-6
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96:110833
Heterogenized cobalt-molybdenum bimetallic complexes over modified silica gel: activation of molecular oxygen.
Leal, O.; Goldwasser, M. R.; Lopez, R.; Arzoumanian, H. (Fac. Cienc., Univ. Cent. Venezuela, Caracas, Venez.). Stud. Surf. Sci. Catal., 7(Pt. B, New Horiz. Catal.), 1512-13 (English) 1981. CODEN: SSCTDM.

ISSN: 0167-2991. DOCUMENT TYPE: Journal CA Section: 67
(Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Heterogenation of a bimetallic complex of bis(triphenylphosphine)iminium m-peroxopentacyanocobaltate(III) oxohydroxopentacyanomolybdate(VI) monohydrate was obtained by ion exchange of a surface-modified silica gel. Cyclohexene was oxidized over this solid at 150°, the main reaction product being the cyclohexene oxide.

Keywords

cyclohexene oxidn cobalt molybdenum catalyst
silica gel surface binuclear complex
binuclear cobalt molybdenum complex catalyst

Index Entries

Oxidation catalysts
cobalt-molybdenum, silica gel-supported, for cyclohexene
7439-98-7, uses and miscellaneous
catalyst, with cobalt on silica gel for oxidn. of cyclohexene
7440-48-4, uses and miscellaneous
catalyst, with molybdenum on silica gel for oxidn. of cyclohexene
110-83-8, reactions
oxidn. of, on cobalt-molybdenum by metallic catalyst on silica gel support
72969-36-9
reaction of, with modified silica gel in oxidn. catalyst prepn.

104:50610
Hydrogenation of cinnamaldehyde catalyzed by homogeneous and heterogenized rhodium(I) and ruthenium(II) complexes.
Brouckova, Zuzana; Czakova, Marie; Capka, Martin (Inst. Chem. Process Fundam., Czech. Acad. Sci., Prague 165 02, Czech.). J. Mol. Catal., 30(1-2), 241-9 (English) 1985. CODEN: JMCADS. ISSN: 0304-5102. DOCUMENT TYPE: Journal CA Section: 25 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
The title reaction was studied at 100-140° and a H pressure of 4 MPa in different solvents. In the presence of [RhCl(CO)2]2 the main product is hydrocinnamaldehyde. Heterogenization of the complex with the use of inorg. supports enhanced the catalytic activity by a factor of ~10. Compared to Rh(I) complexes, Ru catalysts of the type RuX2(CO)(PPh3)3 (X = H, Cl, CO) are more active, leading to the preferred hydrogenation of the carbonyl group. The formation of cinnamyl alc. is the major reaction when the Ru catalysts are heterogenized and when H2O is used as the cosolvent. The conditions under which the selectivity of hydrogenation is 97% with respect to hydrocinnamaldehyde (at 89% conversion), 98% with respect to hydrocinnamyl alc. (at 98% conversion), and 72% with respect to cinnamyl alc. (at 70% conversion) are reported.

Keywords

cinnamaldehyde hydrogenation selectivity catalyst
rhodium catalyst cinnamaldehyde hydrogenation
ruthenium catalyst cinnamaldehyde hydrogenation

Index Entries

Hydrogenation catalysts
rhodium and ruthenium complexes, homogeneous or heterogeneous, for cinnamaldehyde
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121-44-8, uses and miscellaneous
603-35-0, uses and miscellaneous
1310-58-3, uses and miscellaneous
hydrogenation catalyst contg. rhodium or ruthenium complex and
1663-45-2
2622-14-2
7732-18-5, uses and miscellaneous
64-17-5, uses and miscellaneous
630-08-0, uses and miscellaneous
hydrogenation catalysts contg. ruthenium complex and
43108-00-5
99893-87-5
modification of silica catalyst carrier with
16971-33-8
rhodium and ruthenium complexes, homogeneous or
heterogeneous, hydrogenation of cinnamaldehyde by

97:12483
On the conditions of existence of a silica-anchored carbonylphosphinecobalt complex as a heterogenized catalyst for propylene hydroformylation.
Semikolenov, V. A.; Moroz, B. L.; Likholobov, V. A.; Yermakov, Yu. I. (Inst. Catal., Novosibirsk, USSR). React. Kinet. Catal. Lett., 18(3-4), 341-5 (English) 1981. CODEN: RKCLAU. ISSN: 0304-4122.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 22
Studies of the catalytic properties of silica-anchored Co carbonyl-phosphine complexes in propylene hydroformylation in relation to the CO partial pressure indicate that at low pressure (~0.1 MPa), Co complexes are not removed from the support and hydroformylation takes place on anchored complexes.

Keywords

cobalt phosphine carbonyl immobilized catalyst
hydroformylation catalyst propene cobalt complex

Index Entries

Hydroformylation catalysts
cobalt carbonyl-phosphine silica-immobilized complexes, for
propene
7440-48-4, uses and miscellaneous
catalysts, silica-immobilized, for hydroformylation of propene
115-07-1, reactions
hydroformylation of, on cobalt silica-immobilized catalyst
82082-00-6
reaction of, with cobalt and silica in catalyst prepn.

101:7357
Synthesis of bimetallic monomers for heterogenized homogeneous catalysts.
Bitterwolf, Thomas E. (Dep. Chem., U. S. Naval Acad., Annapolis, MD 21402, USA). Polym. Mater. Sci. Eng., 49, 368-72 (English) 1983. CODEN: PMSEDG. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds)
Cr(CO)6 reacted with Ph2 to give (OC)3Cr-h6-C6H5C6H5-h6-Cr(CO)3, which reacted photochem. with diarsines and diphosphines to give bridged dichromium biphenyl complexes I [X = (Ph2P)2CH2, (Me2P)2CH2, Me2PPMe2, (Ph2As)2CH2]. Lithiation and deuteration of I [X = (Ph2P)2CH2] gave D incorporation on the bridging methylene, giving I [X = (Ph2P)2CHD]. Tl phenylcyclopentadienide (TlR) reacted with BrMn(CO)5 to give RMn(CO)3, which reacted with (H3N)3Cr(CO)3 to give bimetal complex II.

Keywords

bimetallic arene complex
manganese chromium arene complex
chromium bis biphenyl complex
catalyst heterogenized homogeneous model
polymer supported catalyst model

Index Entries

Polymer-supported reagents
compds. for, bimetallic arene complexes
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100-58-3
Grignard reaction of, with cyclopentenone
87684-54-6
lithiation and deuteration of
33010-84-3
prepn. and photochem. reaction of, with diphosphine or diarsine
88243-06-5
prepn. and reaction of, with thallous ethoxide
12203-39-3
prepn. and reaction of, with triaminetricarbonylchromium
64078-92-8
87651-87-4
90502-53-7
90502-54-8
90510-37-5
prepn. of
13007-92-6
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90510-42-2
reaction of, with manganese carbonyl
14516-54-2
reaction of, with phenylcyclopentadienide
14974-11-9
reaction of, with phenylcynantrene

97:169734
Decomposition of hydrogen peroxide by heterogenized cobalt acetate complexes.
Blazek, Vaclav; Subcik, Leopold; Setinek, Karel (Inst. Chem. Process Fundam., Czech. Acad. Sci., Prague 16502/6, Czech.). Collect. Czech. Chem. Commun., 47(8), 2227-34 (English) 1982. CODEN: CCCCAK. ISSN: 0366-547X. DOCUMENT TYPE: Journal CA

Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
The mass balance of the HOAc coordinated to Co(II) ions exchanged on a sulfonated macroporous styrene-divinylbenzene copolymer confirmed the existence of heterogenized Co(II) acetate complexes. The amt. of these complexes depends on crosslinking of the copolymer and on the sp. surface of its particles. The dependence agrees with earlier obsd. effects of these parameters on the catalytic and sorption activity of macroporous ion exchangers. The catalytic activity of heterogenized Co(II) acetate complexes was tested in H2O2 decompn. at 30°. The bromide ions do not exert the synergetic effect obsd. on using these complexes as catalysts for oxidn. with gaseous O.

Keywords

catalyst cobalt hydrogen peroxide decompn
acetate complex cobalt polymer immobilized

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64-19-7, cobalt complexes
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7722-84-1, reactions
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102:116266
Use of novel catalysts founded on basic-fixed hydride-carbonyl complexed for the Fischer-Tropsch synthesis.
Hemmerich, R. (Math.-Naturwiss. Fak., Tech. Hochsch. Aachen, Aachen, Fed. Rep. Ger.). Report, NP-4770473; Order No. DE84770473, 196 pp. Avail. NTIS (US Sales Only) From: Energy Res. Abstr. 1984, 9(24), Abstr. No. 49579 (German) 1983.
DOCUMENT TYPE: Report CA Section: 51 (Fossil Fuels, Derivatives, and Related Products) Section cross-reference(s): 67
A novel method was used for fixing transition metal complexes on a carrier, the properties of such heterogenized complexes as precursors for Fischer-Tropsch catalysts were investigated. The hydridic carbonyl complexes HCO(CO)4, HRuCo3(CO)12 and HFeCo3(CO)12 react with amine-modified silica gels in an acid-base reaction to produce surface-bound ammonium salts without the deposition of by-products. By decarbonylation in flowing H, a highly active metal carrier catalyst for Fischer-Tropsch synthesis is produced. X-ray diffraction and SEM anal. revealed that the metal is present in highly dispersed amorphous form on the carrier surface. All catalyst systems have in common the pronounced tendency to form CH4 and straight-chained hydrocarbons with high proportions of olefins.

Keywords

Fischer Tropsch immobilized carbonyl complex
transition metal carbonyl complex heterogenized
cobalt hydridocarbonyl heterogenized Fischer Tropsch
ruthenium cobalt carbonyl Fischer Tropsch

iron cobalt carbonyl Fischer Tropsch
catalyst metal complex Fischer Tropsch

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630-08-0, reactions
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21750-96-9
24013-40-9
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101:217134
Heterogenized transition metal halides in the synthesis finely dispersed metallic and metal complex catalysts. III. Liquid-phase disproportionation of olefins in the presence of tungsten hexachloride fixed to silica.
Yuffa, A. Ya.; Vershinina, L. I.; Furman, D. B.; Bragin, O. V. (USSR).
Deposited Doc., VINITI 4788-83, 11 pp. Avail. VINITI (Russian) 1983.
DOCUMENT TYPE: Report CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 24
The metathesis of 2-pentene over a catalyst dispersion, prepd. by treating lithiated SiO2 gel with a hexane soln. of WCl6 and then a Al2Et3Cl3 soln. in pentane, was studied. The reaction follows the mechanism of B. Dolgoplask (1981). The catalyst has a very high activity.

Keywords
metathesis catalyst pentene dispersion
tungsten chloride aluminum ethyl catalyst metathesis

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109-68-2
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13283-01-7
reactions of, with lithiated silica gel in prepn. of metathesis catalyst

99:59486

Heterogenized rhodium complexes as hydrogen transfer catalysts.
Oro, L. A.; Sariego, R. (Dep. Inorg. Chem., Univ. Zaragoza, Zaragoza, Spain). React. Kinet. Catal. Lett., 21(4), 445-8 (English) 1982.
CODEN: RKCLAU. ISSN: 0304-4122. DOCUMENT TYPE: Journal
CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Cationic Rh(I) norbornadiene complexes with polystyrene-immobilized imidazole, tetramethylbiimidazole or phosphine ligands in the presence of KOH catalyze H transfer from isopropanol to acetophenone and 1-hexene. [Rh(NBD)(poly-PPh2)2]ClO4 complexes are particularly efficient for the redn. of acetophenone, but slow decompn. to Rh metal is obsd.

Keywords

rhodium complex catalysis hydrogen transfer
redn catalyst rhodium norbornadiene imidazole fixed

Index Entries

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121-46-0, surface complex with rhodium and polystyrene grafted ligand
288-32-4, rhodium complex with polystyrene-immobilized
7440-16-6, norbornadiene complexes with polystyrene-grafted ligand
9003-53-6, rhodium complex with
9003-70-7, chloromethylated diphenylphosphine deriv., complex with rhodium and norbornadiene
32799-31-8
69286-06-2, polystyrene derivs., rhodium complexes
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98-86-2, uses and miscellaneous
592-41-6, uses and miscellaneous
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67-63-0, uses and miscellaneous
hydrogen transfer from, to acetophenone and hexene, propionic rhodium norbornadiene catalysts for

102:132126
Heterogenized platinum complexes - prospective catalysts of hydrosilylation and other processes.
Reikhsfel'd, V. O.; Skvortsov, N. K.; Brovko, V. S. (USSR). Perv. Sov.-Indiisk. Seminar. po Kataliz u na Temu: Kataliz i Progress v Khim. Tekhnol., Novosibirsk, 50-5 From: Ref. Zh., Khim. 1984, Abstr. No. 22B4193(Russian) 1984. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds)
Title only translated.

Keywords

platinum complex catalyst hydrosilylation

Index Entries

Hydrosilylation catalysts
heterogenized platinum complexes
7440-06-4, complexes, heterogenized
catalysts, for hydrosilylation and other processes

96:85095
Heterogenized transition metal halides in the synthesis of highly dispersed metallic and metal-complex catalysts. I. Cyclohexene conversion catalysts made of fixed transition metal chlorides.
Yuffa, A. Ya.; Ryazanova, L. M.; Gvozdeva, G. M.; Turova, M. Yu. (Tyumen. Gos. Univ., Tyumen, USSR). Kinet. Katal., 22(6), 1465-8 (Russian) 1981. CODEN: KNKTA4. ISSN: 0453-8811. DOCUMENT TYPE: Journal CA Section: 24 (Alicyclic Compounds)
NiCl2, CuCl2, and CoCl2 were fixed on silica under mild conditions. Photocolorimetry, at. absorption, and spectrophotometric methods were used to follow these processes. Redn. of the NiCl2-silica product gave a highly disperse metallic catalyst, which was active in the conversion of cyclohexene to cyclohexane and benzene.

Keywords

nickel chloride silica disproportionation cyclohexene
copper chloride heterogenization silica
cobalt chloride heterogenization silica
silica heterogenization metal chloride

Index Entries

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7646-79-9, reactions
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7631-86-9, reactions
reaction of, with transition metal chloride

115:113856
Structure and catalytic activity of metal complexes fixed on supports. 4. Heterogenized rhodium(II) complexes in hydrogenation and hydrogen-transfer reactions.
Isaeva, V. I.; Sharf, V. Z.; Zhilyaev, A. N. (Inst. Org. Khim. im. Zelinskogo, Moscow, USSR). Izv. Akad. Nauk SSSR, Ser. Khim., (2), 311-17 (Russian) 1991. CODEN: IASKA6. ISSN: 0002-3353. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
Immobilization of [Rh2(OAc)4] on g-aminopropylated silica gel (supported catalyst I) or styrene-divinylbenzene copolymer contg. 3(5)-methylpyrazole groups (supported catalyst II) led to a significant increase in its catalytic activity: the rate of isomerization of allylbenzene to cis- and trans-propenylbenzenes increased by 1-2 orders of magnitude. The rate of isomerization exceeded that of hydrogenation of allylbenzene with I, whereas the reverse held for II. I and II were also catalytically active for the H-transfer redn. of cyclohexanone with 2-propanol promoted by KOH. The relationships between ligand environments of the supported Rh complexes, Rh oxidn. states, surface structure and catalytic activity were investigated by XPS: acetate complexes retained the Rh dimer structure and the Rh(II) oxidn. state which possessed the highest catalytic activity.

Keywords

rhodium complex supported catalyst

hydrogenation catalyst supported rhodium complex
isomerization catalyst supported rhodium complex
redn catalyst supported rhodium complex
polymer supported rhodium complex catalyst
silica gel supported rhodium complex catalyst
surface structure rhodium complex catalyst
benzene allyl hydrogenation isomerization catalyst
cyclohexanone redn catalytic

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15956-28-2
catalysts, for hydrogenation/isomerization of allylbenzene and hydrogen-transfer redn. of cyclohexanone, effect of immobilization on
110133-62-5, g-aminopropylated silica gel supported
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123307-09-5, g-aminopropylated silica gel supported
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9003-70-7, imidazolyl group contg.
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hydrogenation/isomerization of allylbenzene and
hydrogen-transfer redn. of cyclohexanone

110:7601
Transformations of unsaturated compounds in the presence of heterogenized complexes of transition metals. Synthesis of heterogenized water-soluble metal-complex catalysts.
Kukolev, V. P.; Balyushina, N. A.; Evoyan, Z. K.; Matosyan, V. A.; Chukhadzhyan, G. A. (Nauchno-Proizvod. Ob'edin. "Nairit", USSR).
Arm. Khim. Zh., 41(3), 146-51 (Russian) 1988. CODEN: AYKZAN. ISSN: 0515-9628. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds) Section cross-reference(s): 35
Treating chloromethylated styrene-divinylbenzene copolymer with Li3P in THF and then with R3RhCl, R2RuCl2, R4Pt, R2PdHCl, or R3Rh(CO)R1 (R = Ph3P; R1 = H, Cl) gave 6 corresponding title catalysts. The polymer-bound Rh and Ru complexes catalyzed redn. of 1-heptene by aq. HCO2H, HCO2Na, and esp. their mixt. in £40% yield at 40-100°; redn. was promoted by Me2NCHO. CH2:CHR2 (R2 = CHO, CH2OH, OAc, OBu) and MeCH:CHCHO were analogously reduced to give £60% EtR2 and PrCHO, resp., while EtCOMe and HCYCCH2OH were inert to the reaction conditions. These polymer-bound Rh, Pt, and Pb complexes also catalyzed oligomerization of PhCYCH in 5-14% yield.

Keywords

polymer bound transition metal catalyst
redn unsatd compd catalyst
phenylacetylene oligomerization polymer bound catalyst
ruthenium complex redn catalyst
rhodium complex redn catalyst
alkene redn complex metal catalyst

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34076-51-2, polymer-bound
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107-18-6, reactions
108-05-4, reactions
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592-76-7
4170-30-3
redn. of, polymer-bound transition-metal complex-catalyzed

114:12900
Heterogenized rhodium catalyst and method of obtaining it.
Marciniec, Bogdan; Urbaniak, Wlodzimierz; Foltynowicz, Zenon;
Weimann, Pawel (Uniwersytet im. Adama Mickiewicza, Pol.). Pol. PL
149875 B1 31 Mar 1990, 12 pp. Abstracted and indexed from the
unexamined application. (Poland) CODEN: POXXA7. CLASS: ICM:
B01J031-16. APPLICATION: PL 86-263512 31 Dec 1986.
DOCUMENT TYPE: Patent CA Section: 67 (Catalysis, Reaction
Kinetics, and Inorganic Reaction Mechanisms)

A Rh(I) complex contg. a ligand that produces a p bond with the Rh
atom is deposited on asbestos modified by amination and represented
by the formula I, where R1 designates an alkyl group, X = halide, x is 0 -
20, y is 1 - 10, k is a whole no. between 1 and 6, and R2 designates an
allyl or alkyl group, or a structural element of formula II, in which R1 and k
are same as above. In another variation for the prepn. of the catalyst,
the Rh(I) complex is deposited on asbestos modified by silylation with a
silico-org. compd. of formula R33-nR4nSi(CH2)kNR25, where n is 0.1 or 2,
k is a whole no. of 1 to 6, R3 indicates a lower alkoxy group or a halide,
R4 is a lower alkyl group, and R5 is an allyl or alkyl group, or a group of
the R33-nR4nSi(CH2)k, where R3, R4, n, and k are the same as above. In
still another variation of the procedure, the asbestos is modified with
the aid of a silico-org. compd. of formula R33-nR4nSi(CH2)kX, where X
designates a halide, R3 is a lower alkoxy group or a halide, R4 is a
lower alkyl group, n is 0.1 or 2, and k is a whole no. of 1 to 6. The
heterogenized catalysts obtained have greater resistance to solvents
and org. reagents, as well as greater mech. and thermal resistance.
They are very active in hydrosilylation and can be used in other
reactions catalyzed by Rh complexes, such as hydroformylation or
hydrogenation.

Keywords

rhodium complex catalyst modified asbestos support
hydrosilylation catalyst supported rhodium complex

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130926-28-2
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16068-36-3
16068-37-4
prepn. of, heterogeneous hydrosilylation catalyst of rhodium complex on modified asbestos for

115:114590
Metal complexes in inorganic matrixes. 5. Catalytic silane oxidation at a heterogenized rhodium complex.
Egger, Christian; Schubert, Ulrich (Inst. Anorg. Chem., Univ. Wuerzburg, Wuerzburg D-8700, Fed. Rep. Ger.). Z. Naturforsch., B: Chem. Sci., 46(6), 783-8 (German) 1991. CODEN: ZNBSEN. ISSN: 0932-0776. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 67
A heterogenized Rh complex, prepd. by sol-gel processing of Rh(CO)Cl[PPh2CH2CH2Si(OEt)3]2 and Si(OEt)4, catalyzes the conversion of the silanes H4-nSiPhn (n = 1-3) or (Me2SiH)2O to polysiloxanes by air or water. Using THF as a solvent, the silanols Ph3SiOH or Ph2Si(OH)2 are obtained instead. Reaction of PhCH2CO2H or AcOH with Ph3SiH to give silyl esters is catalyzed by the same compd.

Keywords

siloxyethylphosphino rhodium catalyst silane oxidn
silanol
siloxane
silyl ester

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775-12-2
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789-25-3
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19923-39-8
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947-42-2
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1829-40-9
129049-71-4
129049-92-9
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13938-94-8, polymer-supported
reaction of, with siloxyethylphosphino rhodium complex, silane oxidn. catalyst by
135694-12-1
reaction of, with tetraethoxysilane in presence of ammonium phosphate, silane oxidn. catalyst by

113:77425
Synthesis, structure and catalytic activity of a series of heterogenized rhodium complex for the carbonylation of methanol.
Chen, Yuying; Yuan, Guoqing; Chen, Rongyao (Inst. Chem., Acad. Sin., Beijing, Peop. Rep. China). Huaxue Xuebao, 48(2), 121-6 (Chinese) 1990. CODEN: HHHPA4. ISSN: 0567-7351. DOCUMENT TYPE:
Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 35
A series of heterogenized Rh complex catalysts for the carbonylation of MeOH were synthesized by the reaction of Rh2(CO)4Cl2 with linear and cross-linked copolymers of 2-vinylpyridine and Me vinyl ketone. The active centers of these catalysts consist of (1) a cis-Rh(CO)2 moiety coordinated with the borderline base pyridine N and the adjacent hard base keto O to form N®Rh and O®Rh coordination bond, resp., and (2) the said moiety coordinated with 2 adjacent pyridine N's to form 2 N®Rh bonds. The former plays a more active role than the latter in catalysis. These catalysts are thermally stable. With MeI as promoter, MeOH in AcOH could be carbonylated to AcOH and Ac2O simultaneously as final products with a turnover rate at 104 mol of MeOH converted/mol Rh/h.

Keywords

catalyst rhodium carbonyl vinylpyridine ketone copolymer carbonylation catalyst methanol

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7440-16-6, properties
7782-44-7, properties
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ketone copolymer complex

113:22852
Metal complexes in inorganic matrices. Part III. Catalytic activity of
Rh(CO)Cl(PR3)2 heterogenized by the sol-gel method.
Schubert, Ulrich; Egger, Christian; Rose, Klaus; Alt, Christine (Inst.
Anorg. Chem., Univ. Wuerzburg, Wuerzburg D-8700, Fed. Rep. Ger.).
J. Mol. Catal., 55(1-3), 330-9 (English) 1989. CODEN: JMCADS.
ISSN: 0304-5102. DOCUMENT TYPE: Journal CA Section: 22
(Physical Organic Chemistry) Section cross-reference(s): 67
The catalytic activity of Rh(CO)Cl(PPh2CH2CH2SiO3/2)2.xSiO2, (catalyst
P), prepd. by the polycondensation of
Rh(CO)Cl[PPh2CH2CH2Si(OEt)3]2 (H) with tetraethoxysilane is
compared with that of the homogeneous compd. H and with catalyst S,
prepd. by attaching H to the surface of SiO2. In the hydrosilylation of
1-hexene with triphenylsilane, P and S exhibit similar catalytic activities.
In the absence of an olefin, P is an effective catalyst for the formation of
poly- and oligo-siloxanes from hydrosilanes. P also catalyzes CO
oxidn. and the water-gas shift reaction. Qual. trends between the
catalytic activity of P and its phys. properties are discussed.

Keywords

hydrosilylation hexene triphenylsilane
rhodium carbonyl complex catalyst
water gas shift reaction catalyst

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592-41-6, reactions
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127674-38-8, trimethylsilylated derivs.
prepn. of

112:146344
Heterogenized metal complex catalysts based on palladium black.
Fasman, A. B.; Perkas, N. V. (Inst. Org. Catal. Electrochem., Alma-Ata 480100, USSR). J. Mol. Catal., 55(1-3), 220-8 (English) 1989.
CODEN: JMCADS. ISSN: 0304-5102. DOCUMENT TYPE: Journal
CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 45
By the redn. of p-allyl compds. of Pd such as [PdCl(C3H5)]2, [Pd(C3H5)(C5H5)], and [Pd2(C3H5)(C5H5)(PPh3)2] by NaBH4 and N2H4.H2O, a new type of catalyst was synthesized in which the Pd black serves as a support on whose surface Pd complexes, stabilized by org. ligands, are fixed. The chem. and phase compns. of the catalysts were detd. In the presence of organometallic compds., a highly dispersed metal phase is formed having a narrow particle size distribution. A mechanism for the formation of Pd blacks from the organometallic compds. is proposed, whereby such blacks form via the emergence of pre-cryst. assocs. of reduced Pd whose structures are subsequently ordered after H treatment. Besides metallic Pd, the catalyst surfaces also contain addnl. active centers assocd. with electron-deficient Pd. The activity and selectivity of such blacks in the liq.-phase hydrogenation of org. compds. increase with increasing dispersion of the catalyst and with their fixed complex content. A model is suggested for the structure of Pd blacks generated from organometallic compds.

Keywords

palladium black catalyst prepn organometallic complex
surface structure palladium black catalyst prepn
hydrogenation catalyst palladium black catalyst prepn

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16940-66-2
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1271-03-0
12012-95-2
63600-82-8

redn. of, by sodium borohydride or hydrazine hydrate, in palladium catalysts prepn.

108:149744
Comparison of the catalytic properties of homogeneous and heterogenized carbonyl phosphine-cobalt complexes in the olefin hydroformylation reaction.
Korneeva, G. A.; Butkova, O. L.; Zvezdkina, L. I.; Pritula, N. A.; Loktev, S. M.; Kagan, Yu. B. (A. V. Topchiev Inst. Petrochem. Synth., Moscow 117912, USSR). Homogeneous Heterog. Catal., Proc. Int. Symp. Relat. Homogeneous Heterog. Catal., 5th, 551-61. Edited by: Ermakov, Yu. I.; Likholobov, V. A. VNU Sci. Press: Utrecht, Neth. (English) 1986. CODEN: 56DTA9. DOCUMENT TYPE: Conference
CA Section: 22 (Physical Organic Chemistry) Section
cross-reference(s): 67
To elucidate the possibility of formation of cobalt hydrocarbonyl complexes, modified by phosphine ligands and strongly fixed on silica, whose catalytic properties in olefin hydroformylation should not differ from those obsd. for their homogeneous analogs, the regularities of $HCo(CO)_4$ modification by mono- and bidentate phosphine and silylphosphine ligands were studied. To obtain a heterogeneous catalyst, which is active, selective and stable in the gas-phase propylene hydroformylation, the ligands were chosen by taking into account the results obtained. The surface ligand concns. were detd. provided that the ligand environment of the fixed active center did not differ from that in the homogeneous system.

Keywords

homogeneous carbonyl phosphine cobalt complex
heterogeneous carbonyl phosphine cobalt complex
alkene hydroformylation homogeneous heterogeneous catalyst

Index Entries

Polymer-supported reagents
carbonylphosphine cobalt complexes on silica, hydroformylation catalysts from
Carbonyls
cobalt phosphine complex, hydroformylation catalysts from homogeneous and heterogeneous
Ligands
for heterogeneous carbonylphosphine cobalt hydroformylation complex catalysts
Hydroformylation catalysts
homogeneous or heterogeneous carbonylphosphine cobalt complexes, for propene, kinetics and mechanism with
Surface structure
of heterogeneous carbonylphosphine cobalt complexes, hydroformylation catalytic activity in relation to
Kinetics of hydroformylation
of propene in presence of homogeneous or heterogeneous carbonylphosphine cobalt complexes
Hydroformylation
of propene using homogeneous or heterogeneous carbonyl phosphine cobalt complexes, mechanism with
630-08-0, unspecified
carbonyls, cobalt phosphine complex, hydroformylation catalysts from homogeneous and heterogeneous
16842-03-8
20161-43-7
22392-50-3
113571-81-6

113571-82-7
113571-83-8
113571-84-9
113571-85-0
113571-86-1
113571-87-2
113587-68-1
catalysts, for hydroformylation of propene
998-40-3, reaction product with hydridocobalttetracarbonyl and silica or trimethylsilylated silica
1066-40-6, reaction product with hydridocobalttetracarbonyl and tributylphosphine
7631-86-9, reaction product with hydridocobalttetracarbonyl and tributylphosphine
16842-03-8, reaction product with tributylphosphine, silica, or trimethylsilylated silica
catalysts, for hydroformylation of propene, kinetics and mechanism with
115-07-1, reactions
hydroformylation of, catalysts for
630-08-0, unspecified
hydroformylation, of propene using homogeneous or heterogeneous carbonyl phosphine cobalt complexes, mechanism with
22392-49-0
lack of hydroformylation catalytic activity of

106:23794
Structure and reactivity of heterogenized metal-complex catalytic systems.
D'yachkovskii, F. S.; Pomogailo, A. D. (USSR). 5 Mezhdunar. Simp. po Svyazi mezhdu Gomogen. i Geterogen. Katal., Novosibirsk, 15-19 Iyulya, 1986. Dokl., Novosibirsk, 2(CH 1), 134-56 From: Ref. Zh., Khim. 1986, Abstr. No. 21B4284(Russian) 1986. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Title only translated.

Keywords

review catalyst structure reactivity heterogeneous
complex metal heterogeneous catalyst review
immobilized complex heterogeneous catalyst review

Index Entries

Polymers, uses and miscellaneous
catalysts immobilized on
Coordination compounds
catalysts, structure and reactivity of polymer-immobilized
Catalysts and Catalysis
polymer-immobilized metal complexes, structure and reactivity of

113:154719
Heterogenized transition metal halides in the synthesis of highly dispersed metal and metal-complex catalysts. VII. Catalysts based on fixed transition metal halides in liquid-phase oxidation of hydrocarbons.
Yuffa, A. Ya.; Matsenko, G. P.; Berentsveig, V. V. (Tyumen. Gos. Univ., Tyumen, USSR). Kinet. Katal., 31(3), 614-18 (Russian) 1990.
CODEN: KNKTA4. ISSN: 0453-8811. DOCUMENT TYPE: Journal

CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 23, 67
Oxidn. of cumene (I) and cyclohexene at 65-95° in the presence of $CoCl_2$, $MnCl_2$, $CuCl_2$, and $NiCl_2$ on Li-modified silica supports was affected by the isletlike distribution of the active catalyst component. In the presence of Co-, Mn-, and Ni-contg. catalysts, oxidn. of I occurred by aheterogeneous-homogeneous radical-chain mechanism, whereas in the case of a Cu-contg. catalyst the reaction proceeded at the surface of heterogeneous catalyst. The limiting stages of I oxidn. in the presence of the catalysts were detd. based on kinetic data.

Keywords

transition metal hydrocarbon oxidn catalyst
cumene oxidn catalyst transition metal
cyclohexene oxidn catalyst transition metal

Index Entries

Transition metal chlorides
catalysts, supported on lithium-modified silica, for liq.-phase oxidn. of hydrocarbons
Oxidation catalysts
liq.-phase, transition metal chlorides supported on lithium-modified silica, for hydrocarbons
7439-93-2, uses and miscellaneous
catalyst support modifier, for silica impregnated with transition metal chlorides, for oxidn. of hydrocarbons
7447-39-4, uses and miscellaneous
7646-79-9, uses and miscellaneous
7718-54-9, uses and miscellaneous
7773-01-5
catalysts, supported on lithium-modified silica, for liq.-phase oxidn. of hydrocarbons
98-82-8
110-83-8, reactions
oxidn. of, liq.-phase, transition metal catalysts on lithium-modified silica for

106:39164
Hydrogen transfer reactions catalyzed by heterogenized ruthenium(II) complexes attached to the polycarboxylate matrix.
Valentini, Giorgio; Ciecchi, A.; Di Bunio, S.; Braca, Giuseppe; Sbrana, Glauco (USSR). 5 Mezhdunar. Simp. po Svyazi mezhdu Gomogen. i Geterogen. Katal., Novosibirsk, 15-19 Iyulya, 1986. Dokl., Novosibirsk, 2(Ch 2), 185-203 From: Ref. Zh., Khim. 1986, Abstr. No. 21B4346(Russian) 1986. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 22
Title only translated.

Keywords

hydrogen transfer ruthenium complex catalyst
polycarbonate support ruthenium 2 complex

Index Entries

Aldehydes, reactions
hydrogen transfer between alcs. and, ruthenium complex catalysts in
Alcohols, reactions
hydrogen transfer between aldehydes and, ruthenium complex

catalysts in
Catalysts and Catalysis
Hydrogen transfer catalysts
ruthenium (II) polymer-immobilized complexes
19529-00-1
catalysis by polycarbonate-immobilized, in hydrogen transfer
reactions
7440-18-8, uses and miscellaneous
catalysts, immobilized, for hydrogen transfer

115:79850
Adsorption of complexes with aromatic ligands on carbon supports as
a means for obtaining heterogenized catalysts.
Keterling, A. A.; Lisitsyn, A. S.; Likholobov, V. A.; Gall, A. A.; Trachum,
A. S. (Inst. Katal., Novobirsk, USSR). Kinet. Katal., 31(6), 1453-7
(Russian) 1990. CODEN: KNKTA4. ISSN: 0453-8811. DOCUMENT
TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and
Inorganic Reaction Mechanisms)
The interactions of Pd complexes contg. org. ligands with different
types of supports were studied and the possibility of stable adsorption
on carbonaceous materials was established. The localizationsite of the
Pd center has a strong effect on the catalytic properties. During the
vinyl exchange reaction (e.g., of vinyl acetate with propionic acid),
surface-grafted complexes exhibit high activity in the presence of
ligands which allow the Pd atom to be removed some distance from the
substrate surface. At the same time, close contact of the active center
with the support during adsorption of planar phenanthroline complexes
leads to a decrease in their catalytic activity for vinyl exchange.

Keywords

adsorption palladium complex carbon support
vinyl exchange catalyst grafted complex surface

Index Entries

Adsorption
adsorption of, on active carbon, catalysts prepn. in relation to
Vinylation catalysts
palladium carbon-supported complexes contg. arom. ligands as
7440-44-0, properties
active, adsorption of palladium complexes contg. arom. ligands on
66-71-7
adsorption of palladium acetae and, on active carbon
3375-31-3
adsorption of phenanthroline and, on active carbon
7440-05-3, uses and miscellaneous
catalysts, carbon-supported, for vinylation
135309-49-8
prepn. and reaction of, with 1-pyrenealdehyde
135309-48-7
prepn. of, palladium supported catalysts prepn. in relation to
7140-45-6
reaction of, with butyllithium
108-05-4, reactions
reaction of, with propionic acid in presence of palladium
carbon-supported catalysts
79-09-4, reactions
vinylation of, palladium carbon-supported catalyst in

107:154770

Oligomerization and polymerization of monoolefins via homogeneous and heterogenized nickel catalysts.
Keim, W. (Inst. Tech. Chem. Petrolchem., Rheinisch-Westfael. Tech. Hochsch. Aachen, Aachen D-5100, Fed. Rep. Ger.). Homogeneous Heterog. Catal., Proc. Int. Symp. Relat. Homogeneous Heterog. Catal., 5th, 499-507. Edited by: Ermakov, Yu. I.; Likholobov, V. A. VNU Sci. Press: Utrecht, Neth. (English) 1986. CODEN: 56DTA9. DOCUMENT TYPE: Conference; General Review CA Section: 35 (Chemistry of Synthetic High Polymers)
A review with 10 refs. on the use of Ni chelates as catalyst precursors in soln. and heterogenized on org. and inorg. supports for the oligomerization and polymn. of ethylene and olefins.

Keywords

nickel complex oligomerization catalyst review
ethylene polymn catalyst nickel review
olefin polymn catalyst nickel review

Index Entries

Polymerization catalysts
nickel complexes, for ethylene and olefins
Polymerization catalysts
oligomerization, nickel complexes, for ethylene and olefins
Alkenes, polymers
polymers, prepn. of, catalysts for
7440-02-0, complexes
catalysts, for oligomerization and polymn. of ethylene and olefins
9002-88-4
prepn. of, catalysts for

106:108555
Heterogenized porphyrins. Electronic spectra and catalytic properties.
Kireev, S. G.; Romanovskii, B. V. (Khim. Fak., Mosk. Univ., Moscow, USSR). Zh. Fiz. Khim., 60(8), 2090-1 (Russian) 1986. CODEN: ZFKHA9. ISSN: 0044-4537. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 22
The role of CoL (H2L = tetraphenylporphyrin), FeLCl, and FeL(OH), fixed on silica gel, in the oxidn. of histidine and hydroquinone by O2, was studied by electronic absorption spectra. A correlation was established between the activity of the complexes and their state on the carrier. The electron d. distribution in FeLCl and FeL(OH) is similar, i.e. the character of the P-conjugation is similar. The catalytic activity is related to the central metal ion in the complex and the similar electron d. distribution on the chelates dets. the similar activity of FeLCl and FeL(OH), fixed on SiO2, independent of the axial ligand, in histidine oxidn. None of these complexes are active in hydroquinone oxidn.

Keywords

histidine oxidn catalyst porphyrin complex
iron porphyrin catalyst histidine oxidn
cobalt porphyrin catalyst histidine oxidn

Index Entries

Oxidation catalysts
cobalt and iron tetraphenylporphyrinato complexes, for histidine
14172-90-8, silica-modified
16456-81-8, silica-modified

25482-26-2, silica-modified
catalysis of histidine oxidn. by
71-00-1, reactions
123-31-9, reactions
oxidn. of, in presence of cobalt and iron tetraphenylporphyrinato complexes

113:47242
Radial distribution of heterogenized hydroformylation rhodium complexes in phosphinated polystyrene beads.
Terreros, P.; Pastor, E.; Palacios, J. M.; Fierro, J. L. G. (Inst. Catal. Petroleoquim., CSIC, Madrid 28006, Spain). SIA, Surf. Interface Anal., 15(4), 279-85 (English) 1990. CODEN: SIANDQ. ISSN: 0142-2421.
DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 45, 66
Rh(I) complexes anchored to 2% divinyl benzene cross-lined phosphinated polystyrene were prepd. with chloride and pentafluorophenylthiolate ligands. The cross-sectional distribution of the elements involved in the active complex was examd. by SEM-EDX, and the surface compn. by XPS. The combined use of both techniques revealed that Rh(I) complexes prepd. from a chloride precursor form a weak bond with the phosphine groups of polystyrene, while this bond is stronger when the complex is prepd. from a pentafluorophenylthiolate precursor. Owing to these chem. differences, the catalytic behavior for hept-1-ene hydroformylation is quite different. While the life of a catalyst is only 4 reaction cycles in the former case, it is extended to >11 reaction cycles in the latter. In all cases, a well-defined P (as phospine) profile was obsd., which decreased from the periphery to the center of the beads. Such a profile was almost unaffected by the pretreatments or by the operative conditions; however, an important surface reorganization was obsd. just at the end of the catalyst's life. The profiles of other elements of the active component, namely Rh and Cl (or S), followed, in general, similar trends in fresh prepns. but decreased markedly, esp. in the ex-chloride prepns., with the no. of extn.-washing pretreatments and the no. of cycles in the reaction.

Keywords

rhodium complex phosphinated polystyrene hydroformylation catalyst
surface structure rhodium complex phosphinated polystyrene

Index Entries

Surface structure
of rhodium complexes anchored on phosphinated polystyrene beads, effect of prepn. method on
Hydroformylation catalysts
rhodium complexes anchored on phosphinated polystyrene beads,
rhodium radial distribution in
31781-57-4
75030-29-4
catalysts from phosphinated polystyrene beads and, radial distribution of rhodium in
9003-70-7, phosphinated
catalysts from rhodium complexes anchored on beads of, rhodium radial distribution in

109:230657
Heterogenized boron(III)-molybdenum(VI) mixed oxo derivatives as new bimetallic catalysts for cyclohexene liquid-phase epoxidation.

Tempesti, E.; Giuffre, L.; Di Renzo, F.; Mazzocchia, C.; Modica, G. (Dip. Chim. Ind., Politec. Milano, Milan 20133, Italy). J. Mol. Catal., 45(2), 255-61 (English) 1988. CODEN: JMCADS. ISSN: 0304-5102.
DOCUMENT TYPE: Journal CA Section: 27 (Heterocyclic Compounds (One Hetero Atom))
The polymer-supported title catalysts, in which the formation of B-O-Mo chem. bonds is suggested on the basis of spectral data, retain const. activity when recycled. Relative to conventional homogeneous Mo catalysts, no chem. degrdn. is obsd.

Keywords

epoxidn cyclohexene boron molybdenum catalyst
polymer supported boron molybdenum catalyst

Index Entries

Epoxidation catalysts
boron-molybdenum oxo complexes supported on polymers, for cyclohexene
Kinetics of epoxidation
of cyclohexene on polymer-supported boron-molybdenum oxo complex catalysts
Polymers, compounds
complexes, catalysts contg. boron and molybdenum oxo, for epoxidn. of cyclohexene
7439-98-7, uses and miscellaneous
catalysts from boron, polymer supports and, for epoxidn. of cyclohexene
7440-42-8, uses and miscellaneous
catalysts from molybdenum, polymer supports and, for epoxidn. of cyclohexene
110-83-8, reactions
epoxidn. of, with polymer-supported boron-molybdenum oxo catalysts, kinetics of

107:154769
Structure and reactivity of heterogenized metal complex catalytic systems.
Dyachkovskii, F. S.; Pomogailo, A. D. (Inst. Chem. Phys., Chernogolovka 142432, USSR). Homogeneous Heterog. Catal., Proc. Int. Symp. Relat. Homogeneous Heterog. Catal., 5th, 447-70. Edited by: Ermakov, Yu. I.; Likholobov, V. A. VNU Sci. Press: Utrecht, Neth. (English) 1986. CODEN: 56DTA9. DOCUMENT TYPE: Conference; General Review CA Section: 35 (Chemistry of Synthetic High Polymers)
A review with 27 refs. The distribution of ions of the anchored metal or polymer support, the cooperative character in such systems, and peculiarities of immobilization of heterocomplexes were discussed and these effects were considered in ethylene polymn. The stability and the high activity of immobilized catalytic systems were mainly due to a sharp inhibition of consistent processes in the coordination sphere of a transition metal.

Keywords

review polymer supported metal catalyst
ethylene polymn catalyst review

Index Entries

Polymer-supported reagents
transition metal compds., catalysts, for polymn. of ethylene,

structure and catalytic activity in relation to
Polymerization catalysts
transition metal compds., polymer-supported, for ethylene, structure and catalytic activity in relation to
Transition metals, compounds
compds., catalysts, polymer-supported, for polymn. of ethylene, structure and catalytic activity in relation to
9002-88-4
prepn. of, catalysts for, polymer-supported, structure and catalytic activity in relation to

106:23842
Comparison of catalytic properties of homogeneous and heterogenized carbonyl-phosphine-cobalt complexes in hydroformylation of olefins.
Korneeva, G. A.; Butkova, O. L.; Zvezdkina, L. I.; Pritula, N. A.; Loktev, S. M.; Kagan, Yu. B. (USSR). 5 Mezhdunar. Simp. po Svyazi mezhdu Gomogen. i Geterogen. Katal., Novosibirsk, 15-19 Iyulya, 1986. Dokl., Novosibirsk, 2(CH 1), 223-32 From: Ref. Zh., Khim. 1986, Abstr. No. 21B4357(Russian) 1986. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 22
Title only translated.

Keywords

cobalt phosphine alkene hydroformylation catalyst
carbonyl phosphine cobalt complex catalyst

Index Entries

Hydroformylation catalysts
cobalt carbonyl-phosphine complexes, supported or homogeneous, for alkenes
Carbonyls
cobalt complexes, catalysts for hydroformylation of alkenes
630-08-0, unspecified
carbonyls, cobalt complexes, catalysts for hydroformylation of alkenes
7803-51-2, derivs, cobalt complexes
catalysts, for hydroformylation of alkenes
7440-48-4, uses and miscellaneous
catalysts, for hydroformylation of alkenes, comparison of properties of homogeneous or heterogeneous

107:238865
Hydrogen-transfer reactions catalyzed by heterogenized ruthenium(II) complexes bound to polycarboxylate matrices.
Valentini, G.; Cecchi, A.; Di Bugno, C.; Braca, G.; Sbrana, G. (Dip. Chim. Chim. Ind., Univ. Pisa, Pisa 56100, Italy). Homogeneous Heterog. Catal., Proc. Int. Symp. Relat. Homogeneous Heterog. Catal., 5th, 765-85. Edited by: Ermakov, Yu. I.; Likholobov, V. A. VNU Sci. Press: Utrecht, Neth. (English) 1986. CODEN: 56DTA9. DOCUMENT TYPE: Conference CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Ruthenium complexes of poly(acrylic acid) (optionally crosslinked) and Amberlite IRC 50 were prepd. and compared to terpolymers of Me methacrylate, butanediol diacrylate, and bis(acrylato)bis(triphenylphosphine)ruthenium(II) complexes as catalysts for hydrogen transfer from hexanal to cyclohexanol. The terpolymers showed the highest activity and selectivity improved with

catalyst recycling, although activity always remained below that of homogeneous (low-mol.-wt.) Ru complexes.

Keywords

hydrogen transfer catalyst ruthenium
acrylic polymer ruthenium complex

Index Entries

Hydrogen transfer catalysts
ruthenium complexes bound to polycarboxylate matrixes, for transfer from cyclohexanol to hexanal
7440-18-8, complexes with carboxyl group-contg. polymers
9002-29-3, ruthenium complexes
9003-01-4, ruthenium complexes
19529-00-1, reaction products with carboxyl group-contg. polymers
111431-78-8, ruthenium complexes
111569-30-3
111569-32-5
catalysts, for hydrogen-transfer reaction
108-93-0, uses and miscellaneous
hydrogen transfer from, to hexanal, ruthenium complexes as catalysts for
66-25-1
hydrogen transfer to, from cyclohexanol, ruthenium complexes as catalysts for
108-94-1, preparation
111-27-3, preparation
prodn. of, by hydrogen transfer reaction, ruthenium complexes as catalysts for

123:18848
Synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands. A study of anchoring on the modified zeolites and catalytic properties of heterogenized complexes.
Carmona, A.; Corma, A.; Iglesias, M.; San Jose, A.; Sanchez, F.
(Instituto de Quimica Organica General, CSIC, Juan de la Cierva 3, Madrid 28006, Spain). J. Organomet. Chem., 492(1), 11-21 (English) 1995. CODEN: JORCAI. ISSN: 0022-328X. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 23, 25, 29, 45, 78
Novel chiral bidentate N,N'- and N,P- donors and their rhodium complexes were synthesized and characterized. The reactions of [{Rh(COD)Cl}2] and [RhCl(PPh3)3] with different prepd. chiral ligands: (S)-1-L-2-t-butylaminocarbonylpyrrolidine (1a, 1b), (S)-1-L-2-diphenylphosphinomethylpyrrolidine (2a, 2b), (S)-1-L-2-(1-naphthylaminocarbonyl)pyrrolidine (5a, 5b), (S)-1-L-2-(1-naphthylaminomethyl)pyrrolidine (7a, 7b) (a: L = t-butylaminocarbonyl, b: (3-triethoxysilylpropyl)aminocarbonyl) in the presence of a non-coordinating anion (PF6-) gave the cationic tetracoordinate [Rh(L2)(ligand)][PF6] (L2 = COD or PPh3). The structures of these complexes were elucidated by elemental anal., IR spectroscopy and 1H, 13C and 31P NMR measurements. The metal complexes with 1b, 2b, 5b and 7b, were anchored to silica and modified USY-zeolite and Rh-heterogenized complexes were obtained. A comparative study (homogeneous vs. supported) was made for the catalytic activity and selectivity in several org. reactions.

Keywords

chiral rhodium complex prepn zeolite catalyst

Index Entries

Hydrogenation catalysts
for olefins; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
Hydroboration catalysts
Hydrosilylation catalysts
for styrene; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
Alkenes, reactions
hydrogenation of; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
Catalysts and Catalysis
synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
Zeolites, uses
Y, ultrastable, synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
Ring closure catalysts
cyclopropanation, for styrene; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
623-73-4
cyclopropanation with; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
100-42-5, reactions
hydroboration of; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
110-83-8, reactions
591-49-1
592-41-6, reactions
15802-63-8
hydrogenation of; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
766-77-8
775-12-2
hydrosilylation with; synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes
7631-86-9, uses
163809-11-8
163809-13-0
163809-15-2
163809-17-4
163809-19-6
163809-21-0
163809-23-2

163809-25-4
163809-27-6
163809-29-8
163809-31-2
163809-33-4
163809-35-6
163809-37-8
163809-39-0
163809-41-4
12092-47-6
14694-95-2
67715-16-6
89019-73-8
163809-02-7
163809-03-8
163809-04-9
163809-05-0
163809-06-1
163809-07-2
163809-08-3
163809-09-4
164024-78-6
synthesis and characterization of new chiral Rh(I) complexes with N,N'-, and N,P-ligands and study of anchoring on modified zeolites and catalytic properties of heterogenized complexes

120:16306
Heterogenization of the complex catalyst.
Li, Qilin; Yang, Renwu (Jinzhou Teach. Coll., Jinzhou, Peop. Rep. China). Liaoning Shifan Daxue Xuebao, Ziran Kexueban, 14(1), 41-5, 79 (Chinese) 1991. CODEN: LSDKEQ. ISSN: 1000-1735.
DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 78
A review with 30 refs. of the formation and development of heterogenization of the complex catalyst. It also gives a detailed explanation for the characteristics, varieties and the loading ways of the commonly used inorg. and org. supports. The paper introduces the application of the catalyst in hydrogenation, isomerization and asym. synthesis and looks forward to its future research/development and the prospect of its use.

Keywords

heterogenization complex catalyst review
asym synthesis heterogenized complex catalyst review
hydrogenation heterogenized complex catalyst review
isomerization heterogenized complex catalyst review

Index Entries

Catalysts and Catalysis
Hydrogenation catalysts
Isomerization catalysts
heterogenization of complexes for

125:309872
Heterogenized catalysts for olefin hydroformylation containing cobalt and palladium-cobalt complexes anchored on phosphinated SiO2: a 13C solid-state NMR study.

Moroz, Boris L.; Moudrakovski, Igor L.; Likholobov, Vladimir A. (Boreskov Institute of Catalysis, Novosibirsk 630090, Russia). J. Mol. Catal. A: Chem., 112(2), 217-233 (English) 1996. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 77, 78

13C solid-state NMR technique with high-power H decoupling was employed to study heterogenized hydroformylation catalysts contg. the anchored complexes of general compn. YSi-P2Co2(CO)6.6 and YSi-P2PdCo2(CO)7.8 (where YSi-P2 is the diphosphine ligand covalently bonded to a silica surface). The data on the content and state of complexed CO are compared with those obtained earlier by IR. The values of chem. shift anisotropy provide information on the mol. motion of anchored metal carbonyl fragments. Evidence is presented for the fast restricted motion of these fragments which is not typical for the supported metal crystallites. The interaction of CO, H2, and ethylene with the anchored Co and Pd-Co carbonyl complexes were studied to identify the species which might act as intermediates in hydroformylation reaction. During these studies, the resonances attributed tentatively to p-bonded ethylene and surface propionyls were obsd. Based on the data obtained, we discuss the mechanism of action of Co and Pd-Co catalysts, as well as the reasons of the obsd. Pd-Co synergism.

Keywords

heterogenized catalyst olefin hydroformylation
cobalt complex phosphinated silica hydroformylation catalyst
palladium cobalt complex phosphinated silica catalyst
NMR heterogenized catalyst olefin hydroformylation

Index Entries

Hydroformylation catalysts
Silica gel, uses
Alkenes, reactions
heterogenized catalysts for olefin hydroformylation contg. cobalt and palladium-cobalt complexes anchored on phosphinated SiO2 and 13C solid-state NMR study
829-84-5
13081-67-9
51364-51-3
82082-00-6
74-85-1, reactions
630-08-0, reactions
1333-74-0, reactions
heterogenized catalysts for olefin hydroformylation contg. cobalt and palladium-cobalt complexes anchored on phosphinated SiO2 and 13C solid-state NMR study

123:340243

A convenient molecular self-assembly route to thin films containing terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis.

Petrucci, Maria G. L.; Kakkar, Ashok K. (Dep. Chem., McGill Univ., Montreal, PQ H3A 2K6, Can.). J. Chem. Soc., Chem. Commun., (15), 1577-8 (English) 1995. CODEN: JCCCAT. ISSN: 0022-4936. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 25, 57, 67, 78

Simple acid-base hydrolytic chem. on the surfaces of glass, quartz or Si provides an easy access to thin films contg. terminal amine and phosphine donor ligands which covalently bind a variety of

organometallic complexes, and such oriented ultrathin films supporting a densely packed Ni(0) organometallic complex on glass, catalyze oligomerization of phenylacetylene.

Keywords

anchored nickel rhodium amine phosphine complex
glass anchored nickel rhodium complex catalyst
quartz anchored nickel rhodium complex catalyst
silica anchored nickel rhodium complex catalyst
oligomerization phenylacetylene anchored metal complex
benzene triphenyl
safety prepn anchored metal complexes

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Glass, oxide
anchored nickel rhodium amine phosphine complexes as catalysts for oligomerization of phenylacetylene
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Polymerization
oligomerization, anchored nickel rhodium amine phosphine complexes as catalysts for oligomerization of phenylacetylene
7440-21-3, reaction products with
14808-60-7, reaction products with
536-74-3
2360-09-0
5068-21-3
13007-90-4
14523-22-9
14694-95-2
996-50-9
170646-76-1
170646-77-2
612-71-5
1165-53-3
170646-78-3
170646-79-4
convenient mol. self-assembly route to thin films contg. terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis

124:330629
Synthesis and characterization of chiral Cu(I) complexes with substituted-pyrrolidine-ligands bearing a triethoxysilyl group and preparation of heterogenized catalysts on USY-zeolites.
Carmona, A.; Corma, A.; Iglesias, M.; Sanchez, F. (Instituto de Quimica Organica General, CSIC, Juan de la Cierva 3, Madrid 28006, Spain).
Inorg. Chim. Acta, 244(1), 79-85 (English) 1996. CODEN: ICHAA3. ISSN: 0020-1693. DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions) Section cross-reference(s): 67
New copper complexes [Cu(L-L)(CH3CN)]X (X = ClO4, PF6) where L-L = (S)-2-R-pyrrolidine, (S)-1-R-2-t-butylaminocarbonylpyrrolidine, (S)-1-R-2-(1-naphthylaminocarbonyl)pyrrolidine, (S)-1-R-2-(1-naphthylaminomethyl)pyrrolidine, (2S,4S)-4-amino-1-R-2-t-butylaminocarbonylpyrrolidine [R = (3-triethoxysilylpropyl)aminocarbonyl] were prepd., characterized and supported on a modified ultrastable Y-zeolite contg. supermicropores by a covalent bond. The complexes anchored on the zeolite are easily recycled and show a similar catalytic activity to the free complexes in

homogeneous medium for cyclopropanations of olefins.

Keywords

copper amidopyrrolidine zeolite anchored cyclopropanation catalyst
pyrrolidine copper zeolite anchored catalyst prepn

Index Entries

Zeolites, preparation
Y, ultrastable, copper amidopyrrolidine complex bonded; prepn. of
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Ring closure catalysts
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32717-95-6
72947-47-8
163809-03-8
163809-07-2
163809-09-4
175798-93-3
176218-06-7
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176218-10-3
176218-12-5
176218-14-7
176218-16-9
176218-18-1
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176218-08-9, zeolite bonded
176218-10-3, zeolite bonded
176218-12-5, zeolite bonded
176218-14-7, zeolite bonded
176218-16-9, zeolite bonded
176218-18-1, zeolite bonded
prepn. of cyclopropanation catalysts

120:163084
Heterogenized complexes of transition metals - catalysts of
methylpyridine synthesis from acetaldehyde and ammonia.
Chekurovskaya, E. D.; Akimov, A. N.; Tarasova, T. M. (Sarat. Gos.
Univ., Saratov 410026, Russia). Khim. Geterotsikl. Soedin., (6), 773-9
(Russian) 1993. CODEN: KGSSAQ. ISSN: 0132-6244. DOCUMENT
TYPE: Journal CA Section: 22 (Physical Organic Chemistry)
The following alumina-supported heterocyclization catalysts were
evaluated for the synthesis of 4-methylpyridine from acetaldehyde and
ammonia: PdL2Cl2 (L = 2-amino-2-hydroxymethyl-1,3-propanediol,
3-aminocoumarin, Ph3P, Bu3P, Ph3PO) and
Pd[4-(2-pyridylazo)resorcinol]Cl (I-VI, resp.). Catalytic activity of
N-contg. complexes, decreased in the series I > II > VI; catalytic activity

of P-contg. complexes decreased in the series III > V > IV; the overall activity order was III > V > I > IV > II > VI. The optimum Pd content was 0.25-0.5 mass % of the support. M(PPh3)2Cl2 (M = Pt, Co, Ni) displayed similar catalytic activity to III. Catalytic activity was discussed in terms of donor-acceptor ligand-ligand interactions.

Keywords

heterocyclization ammonia acetaldehyde transition complex catalyst
methypyridine
pyridine methyl

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Transition metals, compounds
complexes, alumina-supported transition metal complex catalysts for heterocyclization of acetaldehyde and ammonia to 4-methylpyridine
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7664-41-7, uses
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14126-40-0
14264-16-5
14977-08-3
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69681-69-2
69823-93-4
73920-59-9
118953-75-6
alumina-supported transition metal complex catalysts for heterocyclization of acetaldehyde and ammonia to 4-methylpyridine
108-89-4
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67-68-5, uses
68-12-2, uses
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122:81460
Perspectives for application of heterogenized metal-complex catalysts for synthesis of organosilicon compounds.
Skvortsov, N. K.; Brovko, V. S.; Lazarev, S. Ya. (USSR). Perspekt. Napravleniya Khimii i Khim. Tekhnol., L., 86-95 From: Ref. Zh., Khim. 1992, Abstr. No. 10B4181(Russian) 1991. DOCUMENT TYPE: Journal CA Section: 29 (Organometallic and Organometalloidal Compounds) Section cross-reference(s): 67
Title only translated.

Keywords

organosilicon compd prepn heterogeneous catalyst
metal complex catalyst prepn organosilicon

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7440-21-3, org. derivs.
metal-complex catalyzed prepn. of organosilicon compds.

122:84138
Carbonylation of methanol to acetic acid and acetic anhydride catalyzed by copolymer rhodium complexs.
Yuan, Guoqing (Inst. Chem., Acad. Sin., Beijing 100080, Peop. Rep. China). Gaofenzi Tongbao, (1), 8-13 (Chinese) 1993. CODEN: GATOE5. DOCUMENT TYPE: Journal; General Review CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
A review with 11 refs. on prepn. and catalysis mechanism of heterogenized Rh complex catalysts for carbonylation of MeOH to acetic acid and acetic anhydride.

Keywords

review rhodium complex catalyst methanol carbonylation

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67-56-1, reactions
prepn. and catalysis mechanism of heterogenized Rh complex catalysts for carbonylation of methanol to acetic and acetic anhydride

124:317448
Hydrogenation of olefins by heterogenized homogeneous water-soluble rhodium catalysts.
Renaud, Eric (Queen's Univ., Kingston, ON, Can.). 183 pp. Avail. Univ. Microfilms Int., Order No. DANN00668 From: Diss. Abstr. Int., B 1996, 56(11), 6123 (English) 1996. DOCUMENT TYPE: Dissertation CA Section: 29 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 21
Abstract Unavailable

Keywords

hydrogenation catalyst olefin rhodium complex

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Hydrogenation catalysts
Alkenes, reactions
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7440-16-6, organometallic complexes
hydrogenation of olefins by heterogenized homogeneous water-sol. rhodium catalysts

120:220802
An efficient heterogenized palladium catalytic system for the reductive carbonylation of nitrobenzene to methyl N-phenylcarbamate.
Choudary, B. M.; Rao, K. Koteswara; Pirozhkov, S. D.; Lapidus, A. L. (Homogeneous Catal. Discipl., Indian Inst. Chem. Technol., Hyderabad 500 007, India). J. Mol. Catal., 88(1), 23-9 (English) 1994. CODEN: JMCADS. ISSN: 0304-5102. DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
A highly active and selective heterogenized homogeneous catalyst, monotmorillonite-bipyridinepalladium(II) acetate complex for the reductive carbonylation of PhNO2 to Me N-phenylcarbamate is reported. With the addnl. advantages, such as ease of filterability and reusability for several cycles with consistent activity and selectivity, the heterogenized system will become practical alternative to other systems described earlier.

Keywords

palladium catalyst reductive carbonylation nitrobenzene

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1318-93-0, intercallation complexes with 2,2'-bipyridine-palladium complexes
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98-95-3, reactions
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117:150589
Thermocatalytic dehydrogenation of cyclooctane with heterogenized trinuclear ruthenium cluster complex.
Yukawa, Kiyoshi; Kanaboshi, Haruo; Saito, Yasukazu (Fac. Eng., Univ. Tokyo, Tokyo 113, Japan). Chem. Lett., (7), 1177-80 (English) 1992. CODEN: CMLTAG. ISSN: 0366-7022. DOCUMENT TYPE: Journal CA Section: 24 (Alicyclic Compounds) Section cross-reference(s): 22
Heterogenized ruthenium cluster, prepd. thermally from Ru3(CO)12 and high-surface active carbon in cyclohexane, exhibited catalytic activity for cyclooctane dehydrogenation under boiling and refluxing conditions [13.6 turnovers/Ru-metal (24 h)]. Half of the CO ligands resided as [Ru(CO)2X2]n, according to IR spectroscopy. The catalytic role of the trinuclear cluster dispersed on the carbon support is discussed with ref. to fitness of its mol. size with the micropore diam.

Keywords

thermocatalytic dehydrogenation cyclooctane
ruthenium cluster catalyst thermocatalytic dehydrogenation cyclooctane

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931-88-4
prepn. of, from thermal catalytic dehydrogenation of cyclooctane
292-64-8
thermal catalytic dehydrogenation of

126:9456
Hydroformylation of mono and multiple unsaturated fatty substances with heterogenized cobalt carbonyl and rhodium carbonyl catalysts.
Xia, Zhigao; Kloeckner, Ulrich; Fell, Bernhard (Institut Technische Chemie Petrolchemie, Rheinisch-Westfaelische Technische Hochschule, Aachen D-52074, Germany). Fett/Lipid, 98(9), 313-321 (German) 1996 VCH CODEN: FELIFX. DOCUMENT TYPE: Journal
CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
Heterogenized Co and Rh carbonyl catalyst systems can be used for the hydroformylation of mono- and polyunsatd. fatty substances in a tech. simple and satisfying manner to useful chem. intermediates. The employed solid tertiary phosphane complex ligands have a silicate matrix and therefore they are also suitable for Co-catalyzed hydroformylation which is best performed at 160-180°. The cobalt-catalyzed reaction gives with polyunsatd. fatty substances almost only products with monofunctionalized fatty acid chains. The Rh catalyzed reaction gives with linoleic or linolenic acid compds. inhomogeneous mixts. of mono- and diformyl derivs. of these fatty substances. The heterogenized Rh carbonyl catalyst systems therefore seem to be more suitable for the hydroformylation of monounsatd. compds. This is also true for Rh carbonyl supported aq. phase-catalysts which give likewise mixts. of mono- and diformyl derivs. in the hydroformylation of polyunsatd. fatty substances. In a batch process after the complete conversion of the olefin and redn. of the CO/H2 pressure, the loss of catalyst metal from the support is negligible and in most cases below the detection limit (<1 ppm).

Keywords

hydroformylation unsatd substance heterogeneous carbonyl catalyst
cobalt carbonyl heterogeneous hydroformylation unsatd substance
rhodium carbonyl heterogeneous hydroformylation unsatd substance
fatty acid hydroformylation heterogeneous carbonyl catalyst
alkene hydroformylation heterogeneous carbonyl catalyst
linseed oil hydroformylation heterogeneous carbonyl catalyst

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C10-13; hydroformylation of unsatd. substances with heterogenized cobalt and rhodium carbonyl catalysts
Alcohols, preparation
C15 alcs., products; hydroformylation of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyl catalysts
Linseed oil
hydroformylation of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyl catalysts
Fatty acids, reactions
hydroformylation of unsatd. fatty substances with heterogenized cobalt carbonyl and rhodium carbonyl catalysts
Alkenes, reactions
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and rhodium carbonyl catalysts
Hydroformylation
of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyls
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products; hydroformylation of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyl catalysts
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byproduct; hydroformylation of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyl catalysts
63995-70-0
catalyst; hydroformylation of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyl catalysts
7440-16-6, complexes with tris(sulfophenyl)phosphine and carbonyl
37221-40-2
37264-96-3
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183371-45-1
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94035-99-1
183371-41-7
product; hydroformylation of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyl catalysts
184110-87-0
solid-phase catalyst ligand; hydroformylation of unsatd. fatty substances with heterogenized cobalt and rhodium carbonyl catalysts

126:200881
Free-of-loss catalyst recycling in the hydroformylation of higher molecular olefins by a novel process technology.
Xia, Zhi Gao; Fell, Bernhard (Institut Technische Chemie Petrolchemie, Rheinisch-Westfaelische Technische Hochschule, Aachen D-52056, Germany). J. Prakt. Chem./Chem.- Ztg., 339(2), 140-144 (German) 1997 Barth CODEN: JPCCEM. ISSN: 0941-1216. DOCUMENT TYPE: Journal CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
A novel homogeneous-heterogeneous procedure for the hydroformylation reaction of higher olefins is presented, in which the reaction itself is homogeneously catalyzed and only after the reaction the catalyst complex is heterogenized only for sepn. This procedure is achieved by using the Li salt of triphenylphosphine monosulfonic acid (Li-TPPMS) as complex ligand for the hydroformylation catalyst and MeOH as solubilizer. Li-TPPMS and its complexes with metal carbonyls are highly sol. in water and MeOH, but completely insol. in almost all other org. solvents. After the reaction the MeOH is distd. off. The catalyst system becomes insol. and can be sepd. from the reaction product by filtration or by extn. with water. The aq. catalyst soln. is evapd. to dryness and the catalyst system dissolved in MeOH for a new reaction.

Keywords

hydroformylation catalyst recyclable rhodium lithium triphenylphosphinesulfonate
olefin hydroformylation catalyst recyclable

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Alcohols, preparation
C15 alcs., model system; process technol. for catalyst recycling in hydroformylation of olefins
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1120-36-1
model system; process technol. for catalyst recycling in hydroformylation of olefins
37221-40-2
process technol. for catalyst recycling in hydroformylation of olefins

127:167342
Efficient supported catalysts based on rhodium complexes with trioctylamine for hydrogenation of unsaturated organic compounds.
Shuikina, L. P.; Turisbekova, K. K.; Frolov, V. M. (Topchiev Institute of Petrochemical Synthesis, Russian Academy of Sciences, Moscow 117912, USA). Kinet. Catal. (Transl. of Kinet. Katal.), 38(3), 370-374 (English) 1997 MAIK Nauka/Interperiodica CODEN: KICAA8. ISSN: 0023-1584. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 23, 24
Heterogenized rhodium-contg. catalysts exhibiting high activity in hydrogenation of multiple carbon-carbon bonds are produced by deposition on the surface of mineral supports of the reaction products obtained by treatment of the trioctylamine complex with rhodium acetate or rhodium trichloride by diisobutylaluminium hydride. It is shown that the highest activity could be achieved when oxides of aluminum, silicon, and rare-earth elements are used as the supports (up to 60,000 mol of the substrate per 1 g-at of Rh per h at 20°C and the pressure of hydrogen 0.1 MPa). The strong promotion effect of water and dihydrogen on the productivity of the supported catalysts based on the complexes of rhodium trichloride with trioctylamine is established.

Keywords

rhodium complex octylamine precursor hydrogenation catalyst
chloride rhodium complex octylamine precursor catalyst
acetate rhodium complex octylamine precursor catalyst

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1344-28-1, uses
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110-83-8, reactions
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1116-76-3, complex with rhodium acetate
10049-07-7, complex with trioctylamine
42204-14-8, complex with trioctylamine
efficient supported catalysts based on rhodium complexes with trioctylamine for hydrogenation of unsatd. org. compds.

127:65385
Heterogenized polymetallic catalysts: Part III. Catalytic air oxidation of alcohols by Pd(II) complexed to a polyphenylene polymer containing b-di- and tri-ketone surface ligands.
Noronha, Glenn; Henry, Patrick M. (Department of Chemistry, Loyola University of Chicago, Chicago, IL 60626, USA). J. Mol. Catal. A: Chem., 120(1-3), 75-87 (English) 1997 Elsevier CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 35
This paper describes further studies on mono- and bi-metallic catalysts attached to a polymer support by b-di- and tri-ketone surface ligands. The previous two papers described the oxidn. of catechol by the heterogeneous catalysts using Cu(II), Fe(III) and Pd(II) as the metal species. The present study expands these studies to a series of mono- and polyfunctional alcs. using Pd(II) as the metal species. The final catalytic surfaces were prepd. by treatment of the modified polymer with a very reactive form of Pd(II), [Pd(CH3CN)4]2+. The simple alcs. gave increases in rates of up to 5-fold for the bimetallic systems. As might be expected glycols and a-D-glucose gave even higher increases in rate in going from the mono- to the bi-metallic catalyst. For ethylene glycol the factor was 30. Unsatd. alcs. gave the most dramatic results. With the monometallic catalyst, the products from allyl alc. consisted of 25% acrolein resulting from direct alc. oxidn. and 75% 3-hydroxypropanal resulting from Wacker-type oxidn. of the double bond. With the bimetallic catalyst the overall rate increased by a factor of 10 and the products consisted of 80% acrolein and 20% 3-hydroxypropanal. The actual rate increase for the direct alc. oxidn. is calcd. to be a factor of 32. 4-penten-2-ol and 4-penten-1-ol gave rates that were lower than the monofunctional alcs. 4-Penten-2-ol and 4-penten-1-ol gave rates that were lower than the monofunctional alcs. This is attributed to inhibition by olefin p-complex formation with the Pd(II).

Keywords

polymer supported autoxidn catalyst alc
palladium polyphenylene diketone triketone autoxidn catalyst
glycol autoxidn polymer supported catalyst
glucose autoxidn polymer supported catalyst
unsatd alc autoxidn polymer supported catalyst
oxidn catalyst polymer supported alc

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625-31-0
821-09-0
poor substrate; catalytic air oxidn. of alcs. by Pd(II) complexed to a polyphenylene polymer contg. b-di- and tri-ketone surface ligands

127:337448
Heterogenized catalysts on zeolites. Synthesis of new chiral Rh(I) complexes with
(2S,4R)-trans-4-RCOO-2-(t-butylaminocarbonyl)pyrrolidines and
(2S,4S)-cis-4-RCONH-2-(t-butylaminocarbonyl)pyrrolidines.
Heterogenization on silica and a USY-zeolite and study of the role of support on their catalytic profile in hydrogenation of olefins.
Corma, A.; Iglesias, M.; Mohino, F.; Sanchez, F. (Instituto de Tecnologia Quimica, UPV-CSIC, Avda. de los Naranjos, Valencia 46022, Spain). J. Organomet. Chem., 544(2), 147-156 (English) 1997 Elsevier CODEN: JORCAI. ISSN: 0022-328X. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 23, 45, 78
Novel chiral ligands
(2S,4R)-2-(t-butylaminocarbonyl)-4-[3-(alkylaminocarbonyl)propanoyloxy]pyrrolidine and
(2S,4S)-cis-4-(alkylaminocarbonylamino)-2-(t-butyl-aminocarbonyl)pyrrolidine (4a,b; 9a,b), (a: alkyl = t-butyl; b: alkyl = 3-triethoxysilylpropyl) and their rhodium complexes were synthesized and characterized. The reactions of [{Rh(cod)Cl}2] and [RhCl(PPh3)3] with the chiral ligands in the presence of a non-coordinating anion (PF6-) gave the cationic complexes [Rh(L2)(ligand)][PF6] (L2 = cod, PPh3). The structures of these complexes were elucidated by elemental analyses, IR spectroscopy and 1H, 13C and 31P NMR measurements. The metal complexes bearing a triethoxysilyl group were covalently bonded to silica and modified USY-zeolite and Rh-heterogenized complexes were obtained. A comparative study (homogeneous vs. supported) was made for the catalytic activity in hydrogenation reactions.

Keywords

rhodium butylaminocarbonyl pyrrolidine complex heterogenized catalyst
silica heterogenization rhodium butylaminocarbonyl pyrrolidine catalyst
zeolite heterogenization rhodium butylaminocarbonyl pyrrolidine catalyst
hydrogenation olefin heterogenized chiral rhodium complex

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&
(2S,4S)-cis-4-RCONH-2-(t-butylaminocarbonyl)pyrrolidines
& heterogenization on silica & USY-zeolite & catalytic hydrogenation of olefins
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197911-04-9
197911-06-1
197911-08-3
197911-10-7
synthesis of chiral Rh(I) complexes with
(2S,4R)-trans-4-RCOO-2-(t-butylaminocarbonyl)pyrrolidines
&
(2S,4S)-cis-4-RCONH-2-(t-butylaminocarbonyl)pyrrolidines
& heterogenization on silica & USY-zeolite & catalytic
hydrogenation of olefins

129:9103
An improved heterogenized manganese complex with more active
sites as oxidation catalyst.
Krishnan, R.; Vancheesan, S. (Department of chemistry, Indian Institute
of technology, Madras 600 036, India). Stud. Surf. Sci. Catal.,
113(Recent Advances in Basic and Applied Aspects of Industrial
Catalysis), 845-849 (English) 1998 Elsevier Science B.V. CODEN:
SSCTDM. ISSN: 0167-2991. DOCUMENT TYPE: Journal CA
Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction
Mechanisms) Section cross-reference(s): 7, 78
The Schiff base polynucleating copolymer ligand, P-dhtenH2 is
synthesized from 2,5-dihydroxyterephthalaldehyde and
ethylenediamine. An insol. polynuclear manganese(III)-Schiff base
complex, [Mn3+n(P-dhten)(OAC)n] is prepd. by refluxing manganese(III)
acetate and the polymeric Schiff base, P-dhtenH2 in ethanol. This
polynuclear manganese complex is used as catalyst for hydrogen
peroxide decompn.

Keywords

heterogenized manganese complex oxidn catalyst
Schiff base manganese oxidn catalyst
hydrogen peroxide decompn Schiff base manganese

Index Entries

Decomposition catalysts
for hydrogen peroxide; improved heterogenized manganese
complex with more active sites as oxidn. catalyst
Oxidation catalysts
improved heterogenized manganese complex with more active
sites as oxidn. catalyst
7722-84-1, reactions
decompn. of; improved heterogenized manganese complex with
more active sites as oxidn. catalyst
64-19-7, complexes with manganese and
ethylenediamine-terephthaldehyde copolymer
7439-96-5, complexes with ethylenediamine-terephthaldehyde
copolymer and acetate
26742-93-8, complexes with manganese and acetate
107-15-3, reactions

993-02-2
1951-36-6
26742-93-8
improved heterogenized manganese complex with more active sites as oxidn. catalyst
9001-05-2
model for; improved heterogenized manganese complex with more active sites as oxidn. catalyst

129:137576
Selective oxidation of benzyl alcohol on a zeolite ship-in-a-bottle complex.
Zsigmond, A.; Notheisz, F.; Frater, Z.; Backvall, J. E. (Department of Organic Chemistry and Organic Catalysis Research Group of the Hungarian Academy of Sciences, Jozsef Attila University, Szeged 6720, Hung.). Stud. Surf. Sci. Catal., 108(Heterogeneous Catalysis and Fine Chemicals IV), 453-459 (English) 1997 Elsevier Science B.V. CODEN: SSCTDM. ISSN: 0167-2991. DOCUMENT TYPE: Journal
CA Section: 45 (Industrial Organic Chemicals, Leather, Fats, and Waxes) Section cross-reference(s): 67
A Co(salophen)-zeolite catalyst (salophen = N,N'-bis(salicylidene)-1,2-phenylenediamine) was prepd. by the template synthesis method. This catalyst was active in the ruthenium catalyzed oxidn. of benzyl alc. The heterogenized Co(salophen), having the same amt. of complex produced a higher rate in the oxidn. reactions than the free complex. It can be explained by the sites isolation theory. In the case of the heterogenized catalyst it was not necessary to use an extra axial ligand such as triphenylphosphine. In the case of Co(salophen)-zeolite catalyst the choice of the solvent was not so crit., as in the case of the free complex.

Keywords

oxidn benzyl alc zeolite cobalt catalyst
ruthenium catalyst oxidn benzyl alc

Index Entries

Zeolites (synthetic), uses
catalysts; selective oxidn. of benzyl alc. in presence of ruthenium and cobalt complex-zeolite catalysts
Oxidation catalysts
selective; selective oxidn. of benzyl alc. in presence of ruthenium and cobalt complex-zeolite catalysts
15529-49-4
39836-45-8
catalysts; selective oxidn. of benzyl alc. in presence of ruthenium and cobalt complex-zeolite catalysts
100-51-6, reactions
100-52-7, preparation
selective oxidn. of benzyl alc. in presence of ruthenium and cobalt complex-zeolite catalysts

128:34637
A dimeric form of Jacobsen's catalyst for improved retention in a polydimethylsiloxane membrane.
Janssen, Kristien B. M.; Laquiere, Isabelle; Dehaen, Wim; Parton, Rudy F.; Vankelecom, Ivo F. J.; Jacobs, Pierre A. (Dept. Interphase Chemistry, Centrum voor Oppervlaktechemie Katalyse, K. U. Leuven, Heverlee (Leuven) B-3001, Belg.). Tetrahedron: Asymmetry, 8(20), 3481-3487 (English) 1997 Elsevier. CODEN: TASYE3. ISSN:

0957-4166. DOCUMENT TYPE: Journal CA Section: 27 (Heterocyclic Compounds (One Hetero Atom)) Section cross-reference(s): 78
A dimeric form of Jacobsen's catalyst was synthesized for better steric occlusion in a polydimethylsiloxane membrane. In homogeneous conditions, the dimer is about as active and enantioselective as Jacobsen's catalyst itself. The relationship between leaching of the complex out of the membrane on one hand and the soly. of the complex and the swelling of the membrane in the solvent used on the other, showed that leaching could be avoided only if low soly. was combined with low swelling or in the case of complete insoly. As the dimer is less sol. and larger than the monomeric form, this form leaches less. The yields and enantioselectivities of the heterogenized system are comparable to those of the homogeneous monomer.

Keywords

Jacobsen catalyst dimer prepn occlusion polydimethylsiloxane epoxidn catalyst asym

Index Entries

Epoxidation catalysts
Stereoselective epoxidation
asym. epoxidn. catalyzed by dimeric form of Jacobsen's catalyst
Polysiloxanes, uses
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9016-00-6
31900-57-9
135620-04-1
199190-76-6
88-18-6
771-98-2
873-66-5
1700-10-3
21436-03-3
37942-07-7
24623-65-2
199190-77-7
199190-78-8
4829-01-0
6690-12-6
23355-97-7
prepn. of dimeric form of Jacobsen's catalyst for improved retention in a polydimethylsiloxane membrane

129:189023
Reduction of nitroaromatics with a new heterogenized MCM-silylamine palladium(II) catalyst.
Kantam, M. L.; Bandyopadhyay, Tapasree; Rahman, Ateeq; Reddy, N. M.; Choudary, B. M. (Indian Institute of Chemical Technology, Hyderabad 500 007, India). J. Mol. Catal. A: Chem., 133(3), 293-295 (English) 1998 Elsevier Science B.V. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds) Section cross-reference(s): 67
A heterogenized Pd complex on MCM-41 zeolite was prepd. for the 1st time and found to be remarkably efficient in the redn. of arom. nitro compds. to the corresponding amino compds.

Keywords

arom nitro compd redn palladium catalyst
amine aryl prepn palladium silylamine catalyst

Index Entries

Hydrogenation
Hydrogenation catalysts
Reduction
Reduction catalysts
Zeolite MCM-41
Nitroaromatic compounds
Aromatic amines
redn. of nitroaroms. with new heterogenized MCM-silylamine palladium(II) catalyst
14220-64-5, MCM-41 zeolite-supported
86-57-7
88-72-2
98-95-3, reactions
99-65-0
99-99-0
100-00-5
100-02-7, reactions
555-16-8, reactions
1144-74-7
62-53-3, preparation
95-53-4, preparation
99-09-2
106-47-8, preparation
106-49-0, preparation
123-30-8
134-32-7
redn. of nitroaroms. with new heterogenized MCM-silylamine palladium(II) catalyst

129:325232
Shape selectivity for alkane hydroxylation with a new class of phosphonate-based heterogenized manganese porphyrins.
Deniaud, David; Spyroulias, Georgios A.; Bartoli, Jean-Francois; Battioni, Pierrette; Mansuy, Daniel; Pinel, Catherine; Odobel, Fabrice; Bujoli, Bruno (Laboratoire de Synthese Organique, BP 92203, (CNRS UMR 6513), Nantes 44322, Fr.). New J. Chem., 22(8), 901-905 (English) 1998 Royal Society of Chemistry. CODEN: NJCHE5. ISSN: 1144-0546. DOCUMENT TYPE: Journal CA Section: 78 (Inorganic Chemicals and Reactions) Section cross-reference(s): 24
Four new Mn(III) porphyrins, heterogenized as insol. Zn phosphonates, exhibit behavior markedly different from their homogeneous counterparts in the competitive hydroxylation of alkane mixts. (i.e., cyclododecane-cyclohexane), using iodosylbenzene as the oxidant. The cyclohexanol:cyclododecanol ratio can be increased by as much as five, owing to shape selectivity effects imposed by the phosphonate support.

Keywords

manganese phosphonated porphyrin prepn hydroxylation catalyst
cyclohexane hydroxylation catalyst manganese phosphonated porphyrin
cyclododecane hydroxylation catalyst manganese phosphonated porphyrin

Index Entries

Hydroxylation catalysts
manganese phosphonated porphyrin complexes contg. zinc for cyclohexane-cyclododecane mixts.

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porphyrin complexes, phosphonated contg. zinc; prepn. and catalytic shape selectivity for hydroxylation of cyclohexane-cyclododecane mixts. in presence of
Metalloporphyrins
transition metal complexes, phosphonated contg. zinc; prepn. and catalytic shape selectivity for hydroxylation of cyclohexane-cyclododecane mixts. in presence of
109-97-7
37083-37-7
50670-58-1
214745-69-4
214745-70-7
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214745-64-9
214745-66-1
214745-68-3
prepn. and catalytic shape selectivity for alkane hydroxylation
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214745-74-1
prepn. and reaction with zinc nitrate
108-93-0, preparation
1724-39-6
prepn. by selective catalytic hydroxylation of cyclohexane-cyclododecane mixts. in presence of manganese phosphonated porphyrin complexes contg. zinc
110-82-7, reactions
294-62-2
selective catalytic hydroxylation of cyclohexane-cyclododecane mixts. in presence of manganese phosphonated porphyrin complexes contg. zinc

128:275599
Chiral catalysis on solids.
Baiker, Alfons (Laboratory of Technical Chemistry, ETH-Zentrum, Swiss Federal Institute of Technology, Zurich CH-8092, Switz.). Curr. Opin. Solid State Mater. Sci., 3(1), 86-93 (English) 1998 Current Chemistry. CODEN: COSSFX. ISSN: 1359-0286. DOCUMENT TYPE: Journal; General Review CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 45
A review, with ~56 refs., on development of catalysts based on chirally modified metals, chiral polymers and heterogenized chiral metal complexes. The crucial properties of these complex catalytic systems are discussed. Exptl. and theor. studies aiming at rationalizing the structure of enantiomeric differentiation of transition states are necessary for rational design. Recently developed catalysts based on immobilized chiral metal complexes and test reactions using the catalysts are described.

Keywords

review catalyst chirally modified metal
chiral polymer metal complex catalyst review

Index Entries

Polymers, uses
chiral; design and development of chiral catalysts based on metal

complexes and chiral polymers
Catalysts
Chirality
Transition state structure
Coordination compounds
design and development of chiral catalysts based on metal
complexes and chiral polymers

131:18887
Selective alkene oxidation with H2O2 and a heterogenized Mn
catalyst: epoxidation and a new entry to vicinal cis-diols.
De Vos, Dirk E.; De Wildeman, Stefaan; Sels, Bert F.; Grobet, Piet J.;
Jacobs, Pierre A. (Center for Surface Chemistry, Katholieke
Universiteit Leuven, Heverlee B-3001, Belg.). Angew. Chem., Int. Ed.,
38(7), 980-983 (English) 1999 Wiley-VCH Verlag GmbH. CODEN:
ACIEF5. ISSN: 1433-7851. DOCUMENT TYPE: Journal CA Section:
27 (Heterocyclic Compounds (One Hetero Atom))
SiO2-attached Mn complexes with 1,4-dimethyl-1,4,7-triazacyclononane
were used as catalysts for epoxidn. of alkenes. Appreciable amts. of
cis-diols were also formed in the reactions of disubstituted alkenes.

Keywords

epoxidn catalyst manganese complex triazacyclononane silica
diol cis prepn manganese complex triazacyclononane

Index Entries

Silica gel, preparation
3-chloropropylated, reaction product with
1,4-dimethyl-1,4,7-triazacyclononane, manganese
complex; alkene epoxidn. and conversion to cis-diols with
heterogenized manganese dimethyltriazacyclononane
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Hydroxylation catalysts
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Alkenes, reactions
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144-62-7, uses
2530-83-8, silica-attached, reaction product with
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100-42-5, reactions
110-83-8, reactions
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592-41-6, reactions
691-38-3
4050-45-7
7688-21-3

141213-10-7
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226701-96-8
96-09-3
278-74-0
286-20-4
768-22-9
922-17-8
1436-34-6
1792-81-0
3204-02-2
4647-42-1
6124-90-9
6124-91-0
7795-79-1
16329-23-0
alkene epoxidn. and conversion to cis-diols with heterogenized
manganese dimethyltriazacyclononane catalyst

130:222799
Hydrogenation reactions on heterogenized Wilkinson complexes.
Bartok, M.; Szollosi, Gy.; Mastalir, A.; Dekany, I. (Department of Organic Chemistry and Organic Catalysis Research Group of the Hungarian Academy of Sciences, Jozsef Attila University, Szeged H-6720, Hung.). J. Mol. Catal. A: Chem., 139(2-3), 227-234 (English) 1999 Elsevier Science B.V. CODEN: JMCCF2. ISSN: 1381-1169.
DOCUMENT TYPE: Journal CA Section: 21 (General Organic Chemistry) Section cross-reference(s): 67
A novel clay catalyst contg. a heterogenized Rh(I) triphenylphosphine complex (Rh-bentonite) has been prepd. via ion exchange of a Hungarian Na+-bentonite with Wilkinson complex [RhCl(PPh3)3]. It was established that the active species [Rh(PPh3)]+ was situated on the external surface of the catalyst, which was found to be efficient in the liq.-phase hydrogenation of 1-octene, cyclohexene, norbornadiene, 1,5-cyclooctadiene, phenylacetylene and cyclohexene-3-one.

Keywords

Wilkinson complex heterogenized hydrogenation catalyst
rhodium bentonite hydrogenation catalyst

Index Entries

Hydrogenation
Hydrogenation catalysts
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Bentonite, uses
ion exchanged with Wilkinson complex; hydrogenation reactions on heterogenized Wilkinson complexes
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14694-95-2, bentonite-supported
110-83-8, reactions
111-66-0
121-46-0
536-74-3
930-68-7
1552-12-1

100-42-5, preparation
108-94-1, preparation
111-65-9, preparation
279-23-2
292-64-8
498-66-8
931-88-4
hydrogenation reactions on heterogenized Wilkinson complexes

130:257753
MCM-41 heterogenized titanium silsesquioxane epoxidation catalysts: a spectroscopic investigation of the adsorption characteristics.
Krijnen, Simon; Mojet, Barbara L.; Abbenhuis, Hendrikus C. L.; Van Hooff, Jan H. C.; Van Santen, Rutger A. (Schuit Institute of Catalysis, Eindhoven University of Technology, Eindhoven 5600 MB, Neth.).
Phys. Chem. Chem. Phys., 1(2), 361-365 (English) 1999 Royal Society of Chemistry. CODEN: PPCPFQ. ISSN: 1463-9076. DOCUMENT TYPE: Journal CA Section: 67 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 66, 73
This paper describes a spectroscopic study of the heterogenization of a novel liq.-phase epoxidn. catalyst, a titanium(4+) silsesquioxane complex. Its immobilization is performed exclusively via a straightforward adsorption of the homogeneous catalyst, i.e. the metal complex, in the pores of an MCM-41 host material. Applying all-silica MCM-41 hosts, stable and heterogeneous liq.-phase epoxidn. catalysts are obtained. These highly active catalytic materials were extensively characterized using diffuse reflectance UV-Vis, XPS and Raman spectroscopy. With these techniques the strong adsorption of the intact catalytic complex within an all-silica MCM-41 host is demonstrated. A spectroscopic investigation on the ancillary cyclohexyl ligands of the silsesquioxane complex reveals strong interactions upon adsorption inside the MCM-41 pore. The interaction of these cyclohexyl ligands with the MCM-41 pore wall, as shown by Raman spectroscopy, reveals a constrained configuration of these ligands. Moreover, a hardly affected cyclopentadienyl ligand on the titanium site upon adsorption suggests a preferable orientation in which the catalytic active titanium site is pointing inside the MCM-41 pore. As such, the accessibility of the titanium site for substrate and oxidant in heterogeneous epoxidn. catalysis is guaranteed, in agreement with the high catalytic activity found for these heterogeneous catalysts.

Keywords

MCM 41 heterogenized titanium silsesquioxane epoxidn catalyst spectroscopy adsorption MCM 41 heterogenized titanium silsesquioxane epoxidn catalyst

Index Entries

Adsorption
Epoxidation catalysts
MCM zeolites
Silsesquioxanes
MCM-41 heterogenized titanium silsesquioxane epoxidn. catalysts and spectroscopic investigation of adsorption characteristics
140225-52-1
MCM-41 heterogenized titanium silsesquioxane epoxidn. catalysts and spectroscopic investigation of adsorption characteristics

130:153366
Asymmetric hydrogenation of itaconates by hectorite-intercalated Rh-DIOP complex.
Sento, Tadashi; Shimazu, Shogo; Ichikuni, Nobuyuki; Uematsu, Takayoshi (Graduate School of Science and Technology, Chiba University, Yayoi-cho, Chiba 263, Japan). J. Mol. Catal. A: Chem., 137(1-3), 263-267 (English) 1999 Elsevier Science B.V. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 23 (Aliphatic Compounds)
Rhodium complex with a chiral phosphine ligand was intercalated into sodium hectorite by a cation exchange method. The intercalation compd. was characterized by FT-IR, XRD and TEM measurements. The basal spacing of the compd. was estd. to be 2.29 nm from XRD measurement. This novel heterogenized catalyst exhibited a characteristic chiral as well as size recognition of the substrates in the hydrogenation of itaconates.

Keywords
hydrogenation itaconate hectorite intercalated rhodium DIOP butanedioate methylene stereoselective hydrogenation hectorite rhodium

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Stereochemistry
Stereoselective hydrogenation
Stereoselective hydrogenation catalysts
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Clays, preparation
synthetic sodium hectorite; asym. hydrogenation of itaconates by hectorite-intercalated Rh-DIOP complex
60594-33-4, ion-exchanged intercalation compd. with synthetic sodium hectorite
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2155-60-4
2409-52-1
13401-95-1
13401-98-4
45233-65-6
asym. hydrogenation of itaconates by hectorite-intercalated Rh-DIOP complex
22644-27-5
114249-51-3
114297-08-4
220246-58-2
220246-64-0
220246-67-3
prepn. of
12173-47-6, sodium-exchanged, intercalation compd. with cationic rhodium[(S,S)-DIOP] complex
synthetic; asym. hydrogenation of itaconates by hectorite-intercalated Rh-DIOP complex

131:299727
XPS investigation of the electronic environment in selected heterogenized zirconocene catalysts.
Atiqullah, M.; Faiz, M.; Akhtar, M. N.; Salim, M. A.; Ahmed, S.; Khan, J. H. (Metallocene Catalysts Research Laboratory, Center for Refining and Petrochemicals, The Research Institute, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia). Surf.

Interface Anal., 27(8), 728-734 (English) 1999 John Wiley & Sons Ltd. CODEN: SIANDQ. ISSN: 0142-2421. DOCUMENT TYPE: Journal
CA Section: 35 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 67, 78
Ethylene-bis(indenyl) zirconium dichloride (Et(Ind)2ZrCl2) and the MAO methylalumoxane (MAO) co-catalyst were heterogenized on Davison silica 955 partially dehydroxylated at 275°, following the concept of equil. adsorption. The influence of MAO on the electronic environment resulting from the heterogenization was studied using XPS. Heterogenization of Et(Ind)2ZrCl2 and MAO on silica generated two types of zirconocenium cations (Cation 1 and Cation 2), independent of the heterogenization methods. Based on the postulated surface chem., Cation 1 is presumed to be in the form of an ion-pair [SiO]-[Et(Ind)2ZrCl]+, whereas Cation 2 is presumed to be a trapped multi-coordinated crown complex of MAO. In the absence of MAO, only Cation 1 is formed. The findings provide support for the postulated surface chem. regarding heterogenization of Et(Ind)2ZrCl2 and MAO on silica in metallocene catalyzed polymn.

Keywords

ethylbisindenyl zirconium dichloride methylalumoxane heterogenization silica
metallocene polymn catalyst heterogenization zirconocene MAO

Index Entries

Binding energy
Competitive adsorption
Ion pairs
Metallocene polymerization catalysts
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adsorption and heterogenization of zirconocene/MAO polymn. catalysts on silica studied by XPS methods
7631-86-9, uses
dehydroxylated, catalyst support; adsorption and heterogenization of zirconocene/MAO polymn. catalysts on silica studied by XPS methods

131:144467
Olefin epoxidation catalyzed by Schiff-base complexes of Mn and Ni in heterogenized-homogeneous systems.
Chatterjee, Debabrata; Mitra, Anannya (Chemistry Section, Central Mechanical Engineering Research Institute, Durgapur 713209, India).
J. Mol. Catal. A: Chem., 144(2), 363-367 (English) 1999 Elsevier Science B.V. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 27 (Heterocyclic Compounds (One Hetero Atom))
M(salen) complexes [M = Mn(III), Ni(II); salen = disalicylideneethylenediamine] have been encapsulated in zeolite Y and characterized. Mn(salen)+ complex was also anchored in montmorillonite clay and characterized. Epoxidn. of olefins, viz. cyclohexene, cyclooctene and 1-hexene with terminal oxidants (NaOCl, KHSO5) was carried out with the anchored catalyst complexes, and the epoxidn. of 1-hexene was more facile than that of the cyclic olefins. Exptl. results are compared with those reported for M(salen)-catalyzed olefin epoxidn. under homogeneous and heterogenized-homogeneous catalytic conditions.

Keywords

epoxidn olefin manganese nickel salen zeolite
montmorillonite manganese salen epoxidn olefin

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Epoxidation catalysts
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Y zeolites
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47111-14-8
110-83-8, reactions
592-41-6, reactions
931-88-4
286-20-4
286-62-4
1436-34-6
olefin epoxidn. catalyzed by Mn and Ni salen complexes in heterogenized-homogeneous systems

131:144155
Iron and copper immobilized on mesoporous MCM-41 molecular sieves as catalysts for the oxidation of cyclohexane.
Carvalho, Wagner Alves; Wallau, Martin; Schuchardt, Ulf (Instituto de Ciencias Biologicas e Quimica, Pontificia Universidade Catolica de Campinas, Campinas 13020-904, Brazil). J. Mol. Catal. A: Chem., 144(1), 91-99 (English) 1999 Elsevier Science B.V. CODEN: JMCCF2. ISSN: 1381-1169. DOCUMENT TYPE: Journal CA Section: 21 (General Organic Chemistry) Section cross-reference(s): 24, 45
A pure silica mesoporous mol. sieve analogous to MCM-41 (Si-MCM-41) was organofunctionalized with 3-aminopropyltrimethoxysilane. The resulting organofunctionalized Si-MCM-41 ((NC3)Si-MCM-41) was suspended in alc. solns. of iron and copper salts to form the resp. metal complexes (M(NC3)Si-MCM-41). Iron and copper were also incorporated into the framework of mesoporous MCM-41 metallosilicates (M-MCM-41) by hydrothermal synthesis. All these catalysts were employed in the liq. phase oxidn. of cyclohexane with aq. H2O2 (30%). The results show that the M(NC3)Si-MCM-41 are more active than the corresponding M-MCM-41. The activity of the catalysts decreases in the following order:
Fe(NC3)Si-MCM-41»Fe-MCM-41»Cu(NC3)Si-MCM-41»Cu-MCM-41.
However, when the catalysts are recycled, leaching of the metals is obsd. The good catalytic activity found for Fe(NC3)Si-MCM-41 can be attributed to the heterogenized iron complex.

Keywords

oxidn catalyst organofunctionalized MCM iron copper
cyclohexane oxidn functionalized zeolite iron copper
alkane oxidn functionalized zeolite iron copper
cycloalkane oxidn functionalized zeolite iron copper

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Oxidation
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7439-89-6, complexes with organofunctionalized MCM-41
7440-50-8, complexes with organofunctionalized MCM-41
13822-56-5, MCM-41-bound, copper complex
13822-56-5, MCM-41-bound, iron complex
110-82-7, reactions
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13822-56-5
108-93-0, preparation
108-94-1, preparation
prepn. of organofunctionalized MCM-41-bound iron or copper as
oxidn. catalysts for cycloalkanes

130:3946
Synthesis, immobilization and catalytic activity of some silylated
cyclopentadienyl rhodium(I) complexes.
Schumann, Herbert; Hasan, Mansour; Gelman, Faina; Avnir, David;
Blum, Jochanan (Inst. anorganische und Analytische Chem.,
Technische Univ. Berlin, Berlin D-10623, Germany). Inorg. Chim. Acta,
280(1-2), 21-25 (English) 1998 Elsevier Science S.A. CODEN:
ICHAA3. ISSN: 0020-1693. DOCUMENT TYPE: Journal CA Section:
29 (Organometallic and Organometalloidal Compounds)
The mixt. of isomers of silylated cyclopentadiene deriv.
C5H5CH2CH2Si(OMe)3 (1) was used for the syntheses of the
mononuclear Rh(I) complexes [h5-C5H4(CH2)2Si(OMe)3]Rh(CO)2 (3),
[h5-C5H4(CH2)2Si(OMe)3]Rh(COD) (4) and
[h5-C5H4(CH2)2Si(OMe)3]Rh(CO)(PPh3) (5). Upon entrapment of 3-5 in
SiO2 sol-gel matrixes, air stable, leach-proof and recyclable catalysts
6-8 resulted. Their catalytic activities in some hydrogenation
processes were compared with those of the nonimmobilized
complexes, 3-5, as well as with those of homogeneous and
heterogenized non-silylated analogs, 9-14.

Keywords

silylated cyclopentadienyl rhodium prepn hydrogenation catalyst
hydrogenation catalyst alkene silylated cyclopentadienyl rhodium

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131:350945
A study of the catalytic properties of silicas modified with complexes of cobalt with 1,3-diazoles.
Belyakova, L. A.; Linkov, V. M.; Kolotusha, T. P. (Inst. Khimii Poverkhnosti, NAN Ukrainy, Kiev, Ukraine). Ukr. Khim. Zh. (Russ. Ed.), 64(11-12), 106-111 (Russian) 1998 Institut Obshchei i Neorganicheskoi Khimii im. V. I. Vernadskogo NAN Ukrainy. CODEN: UKZHAU. ISSN: 0041-6045. DOCUMENT TYPE: Journal CA Section: 22 (Physical Organic Chemistry) Section cross-reference(s): 67
The catalytic properties of the silicas modified by Co complexes with 1,3-diazoles in the liq.-phase oxidn. of cumene were studied. The occurrence of radical-chain process with the participation of heterogenized Co complexes with 1,3-diazoles was proved. The catalytic reaction proceeds with the participation of a Co(III) catalyst via a mechanism involving electron transfer and radical-cation formation.

Keywords

cumene oxidn cobalt diazole complex kinetics mechanism

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catalytic properties of silicas modified with complexes of cobalt with diazoles in cumene oxidn.

131:322488
The catalytic activity of new chiral salen complexes immobilized on MCM-41 by multi-step grafting in the asymmetric epoxidation.
Kim, Geon-Joong; Shin, Ji-Hoon (Department of Chemical Engineering, Inha university, Inchon 402 751, S. Korea). Tetrahedron Lett., 40(37), 6827-6830 (English) 1999 Elsevier Science Ltd.

CODEN: TELEAY. ISSN: 0040-4039. DOCUMENT TYPE: Journal
CA Section: 27 (Heterocyclic Compounds (One Hetero Atom)) Section
cross-reference(s): 78

The chiral salen Mn(III) complexes, e.g. I, were heterogenized on the siliceous MCM-41 by a new grafting method using (3-aminopropyl) trimethoxysilane and 2,6-diformyl-4-tert-butylphenol. The immobilized chiral salen Mn(III) complexes were stable during the reaction and exhibited a relatively high enantioselectivity for epoxidn. of styrene and a-methylstyrene.

Keywords

styrene enantioselective epoxidn
epoxidn catalyst chiral salen manganese complex MCM41
ethylene oxide stereoselective prepn

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chiral; stereoselective epoxidn. of alkenes catalyzed by chiral salen complexes immobilized on MCM-41 by multi-step grafting
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stereoselective epoxidn. of alkenes catalyzed by chiral salen

complexes immobilized on MCM-41 by multi-step grafting